WORLDS OF TOMORROW

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TO THE STARS
J. T. McIntosh

THE IMPOSSIBLE STAR
Brian W. Aldiss

ALL WE MARSMEN
Philip K. Dick

THE NEW SCIENCE OF SPACE SPEECH
Vincent H. Gaddis

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WORLDS OF TOMORROW®

AUGUST 1963

Vol. 1 No. 3

ALL NEW STORIES

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HINDSIGHT and FORESIGHT

We have been getting an unexpectedly large volume of mail on our new offspring, *Worlds of Tomorrow*, and by gosh it has all been pretty complimentary. This does a lot of good for our vanity and makes us feel cheerful, but there is another question to which we'd like the answers: What *don't* you like? And what would you like us to do about it?

Several letters, for example, have in one way or another registered a mild complaint along the lines of, "Why don't you tell us what your policy is going to be?"

Well, this is a fair question. We thought of it. In fact, that is the traditional way to start a new magazine, all glowing promises and a detailed blueprint of in just what inimitable ways your new book will be superior to everything else on the stands. It was with a sense of pioneering that we elected not to do so.

It was our idea at that time that the magazine really ought to speak for itself. And actually, we think it has. If you have read and liked the first few issues, we suppose you will want to read, and we feel sure you will like, the issues which follow. In other words, it seems to us that it isn't absolutely essential for us to tell you what we're going to do . . . because we're doing it.

All the same, maybe it's a good idea, at that, for us to set down what it is we had in mind, so you can judge for yourself how close we're coming to the blueprint.

To begin with the most important part, the stories.

Worlds of Tomorrow will not—repeat, *not*—specialize in any one kind of science-fiction story. We propose to wheel very free indeed. For a while there a lot of science fiction was beginning to look a little weary to us—not because there weren't good writers, and not because they had forgotten how to tell good stories, but because it seemed to us there was an oppressive rigidity in what *kinds* of stories were being written. In part this may have been because of editorial policies. It is all very well to set a policy for a magazine, but from some points of view it began to look like all policy and no stories. Some kinds of stories just never get published, and indeed did not even get written, because their writers could see no markets for them. Heaven knows it is hard enough to write a really good sci-

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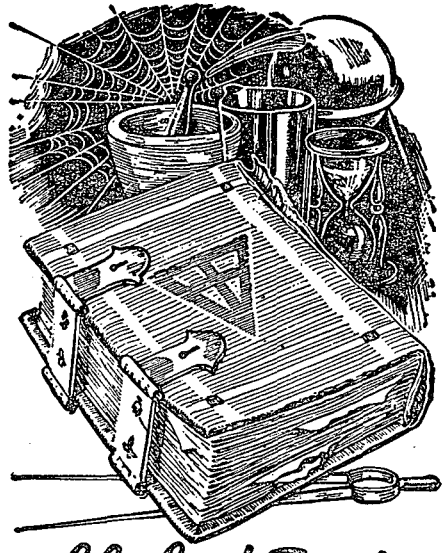

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ence-fiction story. This sort of fossilization of outlets was just one barrier too many. As you may have noted, for better or for worse we have opened up the policies on our other magazines, and although it has disturbed a few readers it seems to have pleased others—and, among other effects, has had the gratifying effect of enabling us to print new stories by a number of writers who for some time had deserted both these magazines and the whole field.

When it came time to think about what we would do with this new one, our final decision was very simple. Each story has to meet three tests.

If (1) we like it; and (2) we think you will like it; and (3) it's science fiction, we'll print it.

That's all we can say, and all there is to say, about the kind of stories you can expect to find in *Worlds of Tomorrow*. They may be as youthful and enjoyable as Arthur C. Clarke's *People of the Sea*, just concluded, or as mature and as brilliant as Philip Dick's *All We Marsmen*, just beginning. They may be short or long, witty or blood-and-thunder, ribtickling or tragic; what we hope they will not be is either bad or dull; and that is the Whole of the Law.

Next, features.

We've had any number of questions about whether we will run book reviews, a science column, letters, etc. To these questions we can give only conditional answers: We will if we can make them very good ones. Check us out if we're wrong on our reasoning, but what we think goes as follows: Both *Galaxy* and *F&SF* have science columns, and pretty good ones; four of the seven magazines in the field already have regular book reviews; the same number, though not the same magazines, already have letter columns. We see no reason why every sf magazine should be just like every other sf magazine, so unless and until we can come up with something as good as the best in each of these areas—if not better—we think we might as well avoid the formality of going through the motions.

But if anyone has any suggestions for something different . . . we're listening!

Something different, in our view, is our series of articles on how close today's fact is coming to the predictions science-fiction has made for tomorrow. Last issue we ran R. C. W. Ettinger's *The Prospects of Immortality*—of which, by the way, you will be hearing a good deal more, to judge by the amount of excitement our publication of the piece has stirred up. The present article is Vincent H. Gaddis's *The New Science of Space Speech;* what the one in the next issue is we cannot say—on this sort of thing, you can't work very far ahead!—except that there are half a dozen separate articles commissioned and in the work, and we'll manage to have one of them ready in time to go to the printer . . .

Exactly which one it will be, though, we are not prepared to announce. That's the whole point, you see. As each issue gets put together, it is as much of a surprise to us as it is to you!

—*FREDERIK POHL*

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ALL WE MARSMEN

BY PHILIP K. DICK

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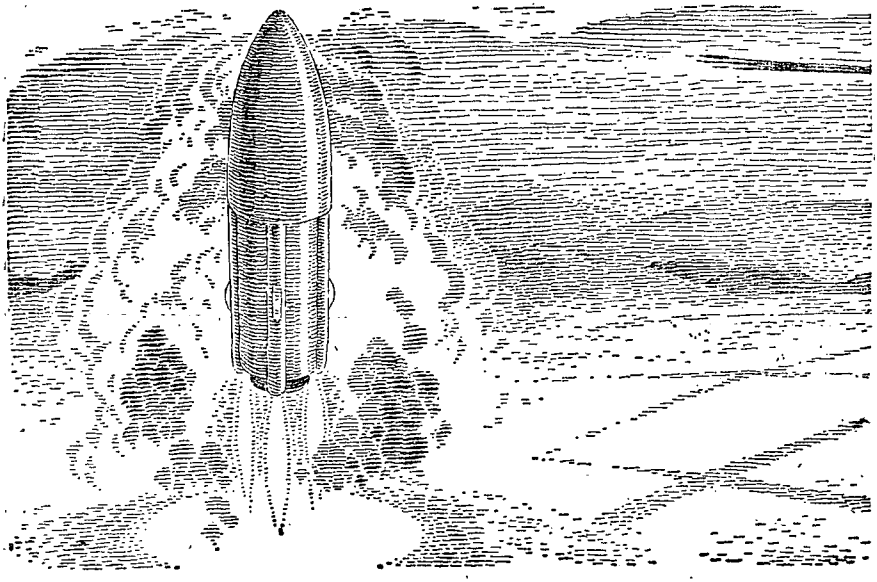

They had bought Mars and paid for it. But something on the planet was still free — and implacable!

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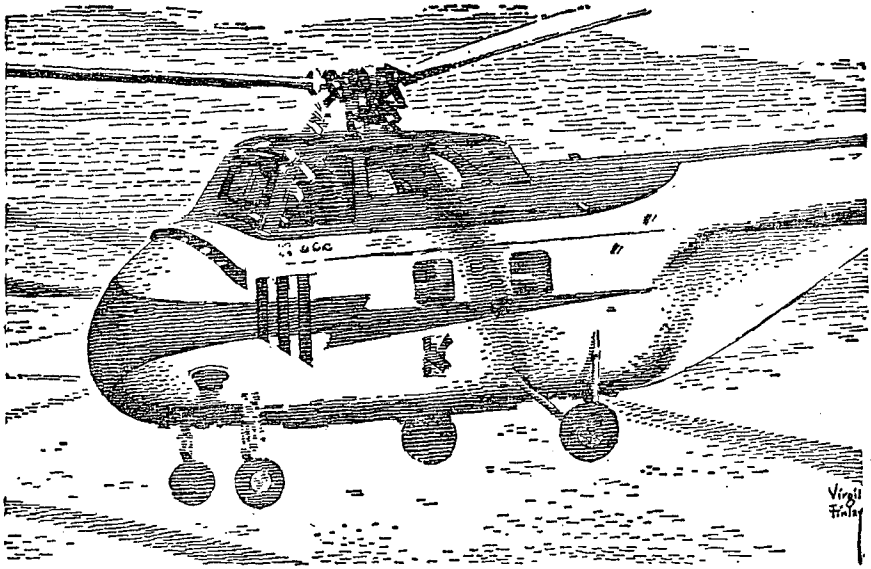

I

In the depths of phenobarbital slumber, Silvia Bohlen heard something that called. Sharp, it broke the layers into which she had sunk, damaging her perfect state of non-self.

"Mom," her son called again, from outdoors.

Sitting up, she took a swallow of water from the glass by the bed; she put her bare feet on the floor and rose with difficulty. Time by the clock: nine-thirty. She found her robe, walked to the window.

I must not take any more of that, she thought. Better to succumb to the schizophrenic process with the rest of the world. She raised the window shade. The sunlight, with its familiar reddish, dusty tinge, filled up her sight and made it impossible to see. She put up her hand, calling, "What is it, David?"

"Mom, the ditch rider's here!"

Then this must be Wednesday. She nodded and walked unsteadily from the bedroom to the kitchen, where she managed to put on the good, solid, Earth-made coffee pot.

What must I do? she asked herself. All's ready for him. David will see, anyhow. She turned on the water at the sink and splashed her face. The water, unpleasant and tainted, made her cough. We should drain the tank, she thought. Scour it, adjust the chlorine flow and see how many of the filters are plugged; perhaps all. Couldn't the ditch rider do that? No, not the UN's business.

"Do you need me?" she asked, opening the back door. The air swirled at her, cold and choked with the fine sand; she averted her head

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and listened for David's answer. He was trained to say no.

"I guess not," the boy grumbled.

Later, as she sat in her robe at the kitchen table drinking coffee, her plate of toast and applesauce before her, she looked out at the sight of the ditch rider arriving in his little flat-bottom boat which put-putted up the canal in its official way, never hurrying and yet always arriving on schedule.

This was 1994, the second week in August. They had waited eleven days, and now they would receive their share of water from the great ditch which passed by their line of houses a mile to the Martian north.

The ditch rider had moored his boat at the sluice gate and was hopping up onto dry land, encumbered with his ringed binder of records and his tools for switching the gate. He wore a gray uniform spattered with mud, high boots almost brown from the dried silt. German? But he was not; when the man turned his head she saw that his face was flat and Slavic and that in the center of the visor of his cap was a red star. It was the Russians' turn, this time. She had lost track.

And she evidently was not the only one who had lost track of the sequence of rotation by the managing UN authorities. For now she saw that the family from the next house, the Steiners, had appeared on their front porch and were preparing to approach the ditch rider. All six of them, father and heavy-set mother and the four girls.

It was the Steiners' water which the rider was now turning off.

"Bitte, mein Herr," Norbert Steiner began, but then he, too, saw the red star, and became silent.

To herself Silvia smiled. Too bad, she thought.

Opening the back door, David hurried into the house. "Mom, you know what? The Steiners' tank sprang a leak last night and half their water drained out! So they don't have enough water stored up for their garden, and it'll die, Mr. Steiner says."

She nodded as she ate her toast. She lit a cigarette.

"Isn't that terrible, Mom?" David said.

Silvia said, "And the Steiners want him to leave their water on just a little longer."

"We can't let their garden die. Remember all the trouble we had with our beets? And Mr. Steiner gave us that chemical from Home that killed the beetles, and we were going to give them some of our beets but we never did; we forgot."

That was true, she recalled with a guilty start. We did promise them ... and they've never said anything, even though they must remember. And David is always over there playing.

"Please go out and talk to the rider," David begged.

She said, "I guess we could give them some of our water later on in the month; we could run a hose over to their garden. But I don't believe them about the leak. They always want more than their share."

"I know," David said, hanging his head.

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"They don't deserve more, David. No one does."

"They just don't know how to keep their property going right," David said. "Mr. Steiner, he doesn't know anything about tools."

"Then that's their responsibility." She felt irritable. It occurred to her that she was not fully awake; she needed a Dexymil, or her eyes would never be open, not until it was nightfall once more and time for another phenobarbital. Going to the medicine cabinet in the bathroom she got down the bottle of small green heart-shaped pills, opened it and counted. She had only twenty-three left. Soon she would have to board the big tractor-bus and cross the desert to town, to visit the pharmacy for a refill.

From above her head came a noisy, echoing gurgle. The huge tin water storage tank on their roof had begun to fill. The ditch rider had finished switching the sluice gate. The pleas of the Steiners had been in vain.

Feeling more and more guilty, she filled a glass with water in order to take her morning pill. If only Jack were home more, she said to herself. It's so empty around here. It's a form of barbarism, this pettiness we're reduced to. What's the point of all this bickering and tension, this terrible concern over each drop of water that dominates our lives? There should be something more! We were promised so much, in the beginning.

Loudly, from a nearby house, the racket of a radio blared up suddenly; dance music, and then an announcer giving a commercial for some sort of farm machinery.

"...depth and angle of the furrow," the voice declared, echoing in the cold bright morning air, "preset and self-adjusting so that even the most unskilled owner can almost the first time—"

Dance music returned; the people had tuned a different station.

The squabble of children rose up. Is it going to be like this all day? she asked herself, wondering if she could face it. And Jack, away until the weekend at his job — it was almost like not being married, like not having a man. Did I emigrate from Earth for this? She clapped her hands to her ears, trying to shut out the noise of radios and children.

I ought to be back in bed; that's where I belong, she thought as she at last resumed dressing for the day which lay ahead of her.

II

In his employer's office in downtown Bunchewood Park, Jack Bohlen talked on the radio telephone to his father in New York City. The contact went through a system of satellites over millions of miles of space. It was none too good, as always, but Leo Bohlen was paying for the call.

"What do you mean, the Franklin D. Roosevelt Mountains?" Jack said loudly. "You must be mistaken, Dad, there's nothing there. It's a total waste area. Anybody in real estate can tell you that."

His father's faint voice came, "No, Jack, I believe it's sound. I want to

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come out and have a look and discuss it with you. How's Silvia and the boy?"

"Fine," Jack said, "but listen. Don't commit yourself, because it's a known fact that any Mars real estate away from the part of the canal network that works — and remember that only about one tenth of it works — comes close to being an outright fraud." He could not understand how his father, with his years of business experience, especially in investments in unimproved land, could have gotten onto such a bum steer. It frightened him. Maybe his dad, in the years since he had seen him, had gotten old. Letters told very little; his dad dictated to one of his company stenographers.

Or perhaps time flowed differently on Earth than on Mars.

He had read an article in a psychology journal suggesting that. His father would arrive a tottering white-haired old relic. Was there any way to get out of the visit? David would be glad to see his grandfather. Silvia liked him, too. In Jack Bohlen's ear the faint, distant voice retailed news of New York City, none of any interest. It was unreal to Jack. A decade ago he had made a terrific effort to detach himself from his community on Earth. He had succeeded; now he did not want to hear about it.

And yet the link with his father remained, and would be shored up in a little while by his father's first trip off Earth. He had always wanted to visit another planet before it was too late — before his death, in other words. Leo was determined, though despite improvements in the big interplan ships, travel was hazardous. That did not bother him. Nothing would deter him; he had already made reservations, in fact.

"Gosh, Dad," Jack said, "it sure is wonderful that you feel able to make such an arduous trip. I hope you're up to it." He felt resigned.

Across from him his employer, Mr. Yee, regarded him and held up a slip of yellow paper on which was written a service call. Skinny, elongated Mr. Yee in his bowtie and single-breasted suite . . . the Chinese style of dress rigorously rooted here on alien soil, as authentic as if Mr. Yee did business in downtown Canton.

Mr. Yee pointed to the slip and then solemnly acted out its meaning; he shivered, poured from left hand to right, then mopped his forehead and tugged at his collar. Then he inspected the wristwatch on his bony wrist. A refrigeration unit on some dairy farm had broken down, Jack Bohlen understood. And it was urgent. The milk would be ruined as the day's heat increased.

"Okay, Dad," he said, "we'll be expecting your wire." He said goodbye and hung up. "Sorry to be on the phone so long," he said to Mr. Yee. He reached for the slip.

"An elderly person should not make the trip here," Mr. Yee said in his placid, implacable voice.

"He's made up his mind to see how we're doing," Jack said.

"And if you are not doing as well as he would wish, can he help you?" Mr. Yee smiled with contempt.

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"Are you supposed to have struck it rich? Tell him there are no diamonds. The UN got them. As to the call which I gave you: that refrigeration unit, according to the file, was worked on by us two months ago for the same complaint. It is in the power source or conduit. At unpredictable times the motor slows until the safety switch cuts it off to keep it from burning out."

"I'll see what else they have drawing power from their generator," Jack said.

It was hard, working for Mr. Yee, he thought as he went upstairs to the roof where the company's 'copters were parked. Everything was conducted on a rational basis. Mr. Yee looked and acted like something put together to calculate. Six years ago he had calculated, at the age of twenty-two, that he could operate a more profitable business on Mars than on Earth. There was a crying need on Mars for service maintenance for all sorts of machinery, for anything with moving parts, since the cost of shipping new units from Earth was so great. An old toaster, thoughtlessly scrapped on Earth, would have to be kept working on Mars.

Mr. Yee had liked the idea of salvaging. He did not approve of waste, having been reared in the frugal, puritanical atmosphere of People's China. And being an electrical engineer in Honan Province, he possessed training. So in a very calm and methodical way he had come to a decision which for most people was a catastrophic emotional wrenching. He had made arrangements to emigrate from Earth exactly as he would have gone about visiting a dentist for a set of stainless steel dentures.

He knew to the last UN dollar how far he could cut his overhead, once he had set up shop on Mars. It was a low-margin operation, but extremely professional. In the six years since 1988 he had expanded until now his repairmen held priority in cases of emergency — and what, in a colony which still had difficulty growing its own radishes and cooling its own tiny yield of milk, was not an emergency?

Shutting the 'copter door, Jack Bohlen started up the engine, and soon was rising above the buildings of Bunchewood Park, into the hazy, dull sky of mid-morning, on his first service call of the day.

An enormous Earth was settling down onto the circle of basalt which was the receiving field for living cargoes. Other cargoes had to be delivered a hundred miles to the east.

This was a first-class carrier, and shortly it would be visited by remote-operated devices which would fleece the passengers of every virus and bacterium, insect and weed seed adhering to them. They would emerge as naked as the day they were born, pass through chemical baths, sputter resentfully through eight hours of tests — and then at last be set free to see about their personal survivals, the survival of the colony having been assured. Some might even be sent back to Earth: those whose condition implied ge-

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metic defects revealed by the stress of the trip.

Jack thought of his dad patiently enduring the immigration processing. Has to be done, my boy, his dad would say. Necessary. The old man, smoking his cigar and meditating . . . a philosopher whose total formal education consisted of seven years in the New York public school system, at its most feral period. Strange, he thought, how character shows itself. The old man was in touch with some level of knowledge which told him how to behave, not in the social sense, but in a deeper, more permanent way. He'll adjust to this world here, Jack decided. In his short visit he'll come to terms as well as David has . . .

They would get along well, his father and his boy. Both shrewd and practical, and yet both haphazardly romantic, as witness his father's impulse to buy land somewhere in the F.D.R. Mountains. It was a last gasp of hope springing eternal in the old man. Here was land selling for next to nothing, with no takers, the authentic frontier which the habitable parts of Mars were patently not.

Below him, Jack noted the Senator Taft Canal and aligned his flight with it. The canal would lead him to the McAuliff dairy ranch with its thousands of acres of withered grass, its once prize herd of Jerseys, now bent into something resembling their ancestors by the unjust environment. This was habitable Mars, this almost-fertile spider web of lines, radiating and criss-crossing, and always barely adequate to support life, no more.

The Senator Taft, directly below now, showed a sluggish and repellent green. The water was sluiced and filtered in its final stages, but there it showed the accretions of time, the underlying slime and sand and contaminants which made it anything but potable. God knew what alkalines the population had absorbed and built into its bones by now. However, they were alive. The water had not killed them, yellow-brown and full of sediment as it was. While over to the west lay the reaches which were waiting for human science to rare back and pass its miracle.

The archeological teams which had landed on Mars early in the '70s had eagerly plotted the stages of retreat of the old civilization which human beings had not begun to replace. It had not at any time inhabited the desert proper. Evidently, as with the Tigris and Euphrates civilization of Earth, it had clung to what it could irrigate. At its peak, the old Martian culture had occupied a fifth of the planet's surface, leaving the rest as it had found it. Jack Bohlen's house, for instance, was near the junction of the William Butler Yeats Canal with the Herodotus. It lay almost at the edge of the network by which fertility had been attained for the past five thousand years. The Bohlens were lateconiers, although no one had known, eleven years ago, that emigration would fall off so startlingly.

The radio of the 'copter made static noises, and then a tinny version of Mr. Yee's voice said,

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"Jack, I have a service call for you to add. The UN Authority says that the Public School is malfunctioning and their own man is unavailable."

Picking up the microphone, Jack said into it, "I'm sorry, Mr. Yee. I thought I'd told you I'm not trained to touch those school units. You'd better have Bob or Pete handle that." As I know I told you, he said to himself.

In his logical way, Mr. Yee said, "This repair is vital and therefore we can't turn it down, Jack. We have never turned down any repair job. Your attitude is not positive. I will have to insist that you tackle the job. As soon as it is possible I will have another repairman out to the school to join you. Thank you, Jack." Mr. Yee rang off.

Thank you, too, Jack Bohlen said acidly to himself.

Below him now he saw the beginnings of a second settlement. This was Lewistown, the main habitation of the plumbers' union colony which had been one of the first organized on the planet, and which had its own union members as repairmen; it did not patronize Mr. Yee. If his job became too unpleasant, Jack Bohlen could always pack up and migrate to Lewistown, join the union and go to work at perhaps an even better salary. But recent political events in the plumbers' union colony had not been to his liking. Arnie Kott, President of the Water Workers' Local, had been elected only after much peculiar campaigning and some more-than-average balloting irregularities. His regime did not strike Jack as the sort he wanted to live under. From what he had seen of it, the old man's rule had all the elements of early Renaissance tyranny, with a bit of nepotism thrown in.

And yet the colony appeared to be prospering economically. It had an enormous cash reserve. The colony was not only efficient and prosperous, it was also able to provide decent jobs for all its inhabitants. With the exception of the Israeli settlement to the north, the union colony was the most viable on the planet. And the Israeli settlement had the advantage of possessing die-hard Zionist shock units, encamped on the desert proper, engaged in reclamation projects of all sorts, from growing oranges to refining chemical fertilizers. Alone, New Israel had reclaimed a third of all the desert land now under cultivation. It was, in fact, the only settlement on Mars which exported produce back to Earth in any quantity.

The Water Workers' Union capital city of Lewistown passed by, and then the monument to Alger Hiss, the first UN martyr, and then open desert followed.

Jack sat back and lit a cigarette. Under Mr. Yee's prodding scrutiny, he had left without remembering to bring his thermos of coffee, and he now felt its lack. He felt sleepy. They won't get me to work on the Public School, he said to himself, but with more anger than conviction. I'll quit. But he knew he wouldn't quit. He would go to the school, tinker with it for an hour or so, giving the impression of being busy

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repairing, and then Bob or Pete would show up and do the job. The firm's reputation would be preserved, and they could go back to the office. Everyone would be satisfied, including Mr. Yee.

Several times he had visited the Public School with his son. That was different. David was at the top of his class, attending the most advanced teaching machines along the route. He stayed late, making the most of the tutorial system of which the UN was so proud. Looking at his watch, Jack saw that it was ten o'clock. At this moment, as he recalled from his visits and from his son's accounts, David was with the Aristotle, learning the rudiments of science, philosophy, logic, grammar, poetics, and an archaic physics.

Of all the teaching machines, David seemed to derive the most from the Aristotle, which was a relief. Many of the children preferred the more dashing teachers at the School: Sir Francis Drake (English history, fundamentals of masculine civility) or Abraham Lincoln (United States history, basics of modern warfare and the contemporary state) or such grim personages as Julius Caesar and Winston Churchill.

He himself had been born too soon to attend the tutorial school system. He had gone to class as a boy, sat with sixty other children, and later in high school had found himself listening and watching an instructor speaking over a closed TV-circuit along with a class of a thousand. If, however, he had been allowed into the new school, he could readily have located his own favorite. On a visit with David, on the first parent-teacher day in fact, he had seen the Thomas Edison teaching machine, and that was enough for him. It took David almost an hour to drag his father away from that.

Below the 'copter, the desert land gave way to sparse prairie-like grassland. A barbed wire fence marked the beginning of the McAuliff ranch, and with it the area administered by the State of Texas. McAuliff's father had been a Texas oil millionaire, and had financed his own ships for the emigration to Mars; he had beaten even the plumbers' union people.

Jack put out his cigarette and began to lower the 'copter, searching against the glare of the sun for the buildings of the ranch.

A small herd of cows panicked and galloped off at the noise of the 'copter. He watched them scatter, hoping that McAuliff, who was a short, dour-faced Irishman with an obsessive attitude toward life, hadn't noticed. McAuliff, for good reasons, had a hypochondriacal view of his cows; he suspected that all manner of Martian *things* were out to get them, to make them lean, sick, and fitful in their milk production.

Turning on his radio transmitter, Jack said into the microphone, "This is a Yee Company repairship, Jack Bohlen, asking permission to land on the McAuliff strip, in answer to your call."

He waited, and then in came the answer from the huge ranch. "Okay,

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Bohlen, all clear. No use asking what took you so long." McAuliff's resigned, grumpy voice.

"Be there any minute now," Jack said, with a grimace.

Presently he made out the buildings ahead, white against the sand.

"We've got fifteen thousand gallons of milk here," McAuliff's voice came from the radio speaker. "And it's all going to spoil unless you get this damned refrigeration unit going soon."

"On the double," Jack said. He put his thumbs in his ears and leered a grotesque, repudiating face at the radio speaker.

III

The ex-plumber, Supreme Good-member Arnie Kott of the Water Workers' Local Fourth Planet Branch, rose from his bed at ten in the morning and as was his custom strolled directly to the steam bath.

"Hello, Gus."

"Hi there, Arnie."

Everybody called him by his first name, and that was good. Arnie Kott nodded to Bill and Eddy and Tom and they all greeted him. The air, full of steam, condensed around his feet and drained off across the tile, to be voided. That was a touch which pleased him. The baths had been constructed so as not to preserve the run-off. The water drained out onto hot sand and disappeared forever. Who else could do that? He thought; Let's see if those rich Jews up in New Israel have a steam bath that wastes water.

Placing himself under a shower, Arnie Kott said to the fellows around him, "I heard some rumor I want checked on as soon as possible. You know that combine from California, those Portugees that originally held title on the F.D.R. Mountain Range, and they tried to extract iron ore there, but it was too low grade and the cost was way out of line? I heard they sold their holdings."

"Yeah, I heard that too." All the boys nodded. "I wonder how much they lost. Must have taken a terrible beating."

Arnie said, "No, I heard they found a buyer that was willing to put up more than they paid. They made a profit, after all these years. So it paid them to hold out. I wonder who's nuts enough to want that land. I got some mineral rights there, you know. I want you to check into who bought that land and what kind of operation they represent. I want to know what they're doing over there. Best to know those things."

Again everyone nodded, and one man — Fred, it looked like — detached himself from his shower and padded off to dress. "I'll check into that, Arnie," Fred said over his shoulder. "I'll check right away."

Addressing himself to the remaining men, Arnie soaped himself all over and said, "You know I got to protect my mineral rights. I can't have some smoozer coming in here from Earth and making those mountains into like for instance a national park for picnickers. I tell you what I heard. I know that a bunch of Communist officials from Russia

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and Hungary, big boys, was over here around a week ago, no doubt looking around. You think because that collective of theirs failed last year they gave up? No. They got the brains of bugs and like bugs they always come back. Those Reds are hot to establish a successful collective on Mars. I wouldn't be surprised if we find out that those Portugees from California sold to Communists, and pretty soon we're seeing the name changed from the F.D.R. Mountains, which is right and proper, to something like the Joe Stalin Mountains."

The men all laughed appreciatively.

"Now, I got a lot of business ahead of me today to conduct," Arnie Kott said, washing the soap suds from him with furious streams of hot water, "so I can't devote myself to this matter any further. I'm relying on you to dig into it. For example, I have been traveling east where we got that melon experiment in progress, and it seems like we're about to be entirely successful in inducing the New England type of melon into growing here in this environment. I know you all have been wondering about that, because everybody likes a good slice of cantaloupe in the morning for his breakfast, if it's at all possible."

"That's true, Arnie," the boys agreed.

"But," Arnie said, "I got more on my mind than melons. We had one of those UN boys visiting us the other day protesting our regulations concerning the niggers. Or maybe I shouldn't say that. Maybe I should talk like the UN boys and say 'indigenous population remnants,' or just Bleekmen. What he had reference to was our licensing the mines owned by our settlement to use Bleekmen at below scale, I mean, below the minimum wage, because even those fairies at the UN don't seriously propose we pay scale to Bleekmen niggers. However, we have this problem that we can't pay any minimum wage to the Bleekmen niggers because their work is so inconsistent that we'd go broke, and we have to use them in mining operations because they're the only ones who can breathe down there and we can't get oxygen equipment in quantity transported over here at any price less than outrageous. Somebody's making a lot of money back home on those oxygen tanks and compressors and all that. It's a racket. And we're not going to get gouged, I can tell you."

Everybody nodded somberly.

"Now, we can't allow the UN bureaucrats to dictate to us how we'll run our settlement," Arnie said. "We set up operations here before the UN was anything here but a flag planted in the sand. We had houses built before they had a pot to pee in anywhere on Mars, including all that disputed area in the south between the U.S. and France."

"Right, Arnie," the boys all agreed.

"However," Arnie said, "there's the problem that those UN fruits control the waterways, and we got to have water. We need them for conveyance into and out of the settlement and for source of power and to drink and like now, like we're

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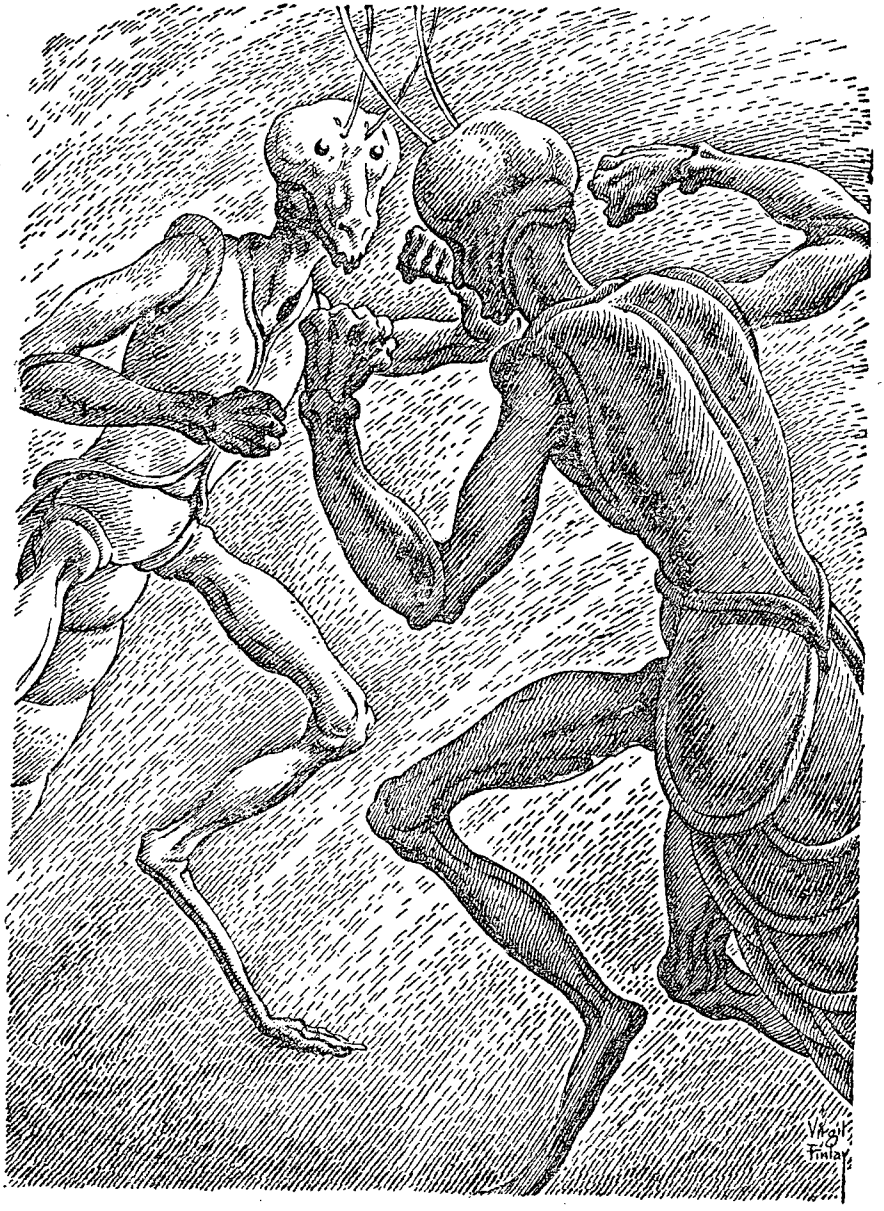

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here bathing. I mean, those buggers can cut off our water any time; they've got us by the short hairs."

He finished his shower and padded across the warm, wet tile to get a towel from the attendant. Thinking about the UN made his stomach rumble, and his one-time duodenal ulcer began to burn way down in his left side, almost at the groin. Better get some breakfast, he realized.

When he had been dressed by the attendant, in his gray flannel trousers and t-shirt, soft leather boots and nautical cap, he left the steam bath and crossed the corridor room, where Helio, his Bleekman cook, had his breakfast waiting. Shortly, he sat before a stack of hot-cakes and bacon, coffee and a glass of orange juice, and the previous week's New York *Times*, the Sunday edition.

"Good morning, Mr. Kott." In answer to his button-pressing, a secretary from the pool had appeared, a girl he had never seen before. Not too good-looking, he decided after a brief glance. He returned to reading the newspaper. And calling him Mr. Kott, too.

He sipped his orange juice and read about a ship that had perished in space with all three hundred aboard killed. It was a Japanese merchantman carrying bicycles. That made him laugh. Bicycles in space, and all gone, now. Too bad, because on a planet with little mass like Mars where there was virtually no power source — except the sluggish canal system — and even kerosene cost a fortune, bicycles were of great economic value. A man could pedal free of cost for hundreds of miles, right over the sand, too. The only people who used kerosene-powered turbine conveyances were vital functionaries, such as the repair and maintenance men, and of course important officials such as himself. There were public transports, of course, such as the tractor buses which connected one settlement with the next and the outlying residential areas with the world at large . . . but they ran irregularly, being dependent on shipments from Earth for their fuel. And personally speaking the buses gave him claustrophobia, they moved so slow.

Reading the New York *Times* made him feel for a little while as if he were back home again, in South Pasadena. His family had subscribed to the West Coast edition of the *Times*, and as a boy he remembered bringing it in from the mailbox, in from the street lined with apricot trees, the warm, smoggy little street of neat one-story houses and parked cars and lawns tended from one weekend to the next without fail. It was the lawn, with all its cares and medicines, that he missed most, the wheelbarrow of fertilizer, the new grass seed, snippers, the poultry-netting fence in the early spring . . . and always the sprinklers at work throughout the long summer, whenever the law allowed. Water shortage there, too. Once his uncle Paul had been arrested for washing his car on a water-ration day.

Reading further in the paper he

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came onto an article about a reception at the White House for a Mrs. Lizner who, as an official of the Birth Control Agency, had performed eight thousand therapeutic abortions and had thereby set an example for American womanhood. Kind of like a nurse, Arnie Kott decided. Noble occupation for females. He turned the page.

There, in big type, was a quarter-page ad which he himself had helped compose, a glowing come-on to get people to emigrate. Arnie sat back in his chair, folded the paper, felt deep pride as he studied the ad. It looked good, he decided. It would surely attract people, if they had any guts at all and a sincere desire for adventure, as the ad said

The ad listed all the skills in demand on Mars, and it was a long list, excluding only canary raiser and proctologist, if that. It pointed out how hard it was for a person with only a master's degree to get a job on Earth, now, and how on Mars there were good-paying jobs for people with only B.A.s.

That ought to get them, Arnie thought. He himself had emigrated due to his having only a B.A. Every door had been shut to him, and then he had come to Mars as nothing but a union plumber and within a few short years, look at him. On Earth, a plumber with only a B.A. would be raking up dead locusts in Africa as part of a U.S. Foreign Aid work-gang. In fact, his brother Phil was doing that right now. He had graduated from the University of California and never had a chance to practice his profession, that of milk tester. In his graduating class, over a hundred milk testers had been graduated, and for what? There were no opportunities on Earth. You have to come to Mars, Arnie said to himself. We can use you here. Look at the pokey cows on these dairy ranches outside of town. They could use some testing.

But the catch in the ad was simply that, once on Mars, the emigrant was guaranteed nothing, not even the certainty of being able to give up and go home. Trips back were much more expensive, due to the inadequate field facilities. Certainly, he was guaranteed nothing in the way of employment.

The fault lay with the big powers back home, China and the U.S. and Russia and West Germany. Instead of properly backing the development of the planets, they had turned their attention to further exploration. Their time and brains and money were all committed to the sidereal projects such as the damn-fool flight to Centaurus, which had already wasted billions of dollars and man-hours. Arnie Kott could not see the sidereal projects for beans. Who wanted to take a four-year trip to another solar system which maybe wasn't even there?

And yet at the same time Arnie feared a change in the attitude of the great terrestrial powers. Suppose one morning they woke up and took a new look at the colonies on Mars and Venus? Suppose they eyed the ramshackle developments there and decided something should be done

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about it? In other words, what became of Arnie Kott when the Great Powers came to their senses? It was a thought to ponder.

However, the Great Powers showed no symptoms of rationality. Their obsessive competitiveness still governed them. Right this moment they were locking horns two light years away, to Arnie's relief.

Reading further in the paper he came across a brief article having to do with a women's organization at Berne, Switzerland, which had met to declare once more its anxiety about colonization.

COLONIAL SAFETY COMMITTEE ALARMED OVER CONDITIONS OF MARS LANDING FIELDS

The ladies, in a petition presented to the Colonial Department of the UN, had expressed once more their conviction that the fields on Mars at which ships from Earth landed were too remote from habitation and from the water system. Passengers in some cases had been required to trek over a hundred miles of wasteland, and this included women and children and old people. The Colonial Safety Committee wanted the UN to pass a regulation compelling ships to land at fields within twenty-five miles of a major (named) canal.

Do-gooders, Arnie Kott thought as he read the article. Probably not one of them has ever been off Earth. They just know what somebody wrote home in a letter, some aunt retiring to Mars on a pension, living on free UN land and naturally griping. And of course they also depended on their member in residence on Mars, a certain Mrs. Anne Esterhazy. She circulated mimeographed newsletters to other public-spirited ladies throughout the settlements. Arnie received and read her newsletter, the AUDITOR SPEAKS BACK, a title at which he gagged. He gagged, too, at the one- and two-line squibs inserted between longer articles:

* * *

Pray for potable purification!! Contact colony chrismatic councilors and witness for water filtration we can be proud of!

* * *

He could hardly make out the meaning of some of the AUDITOR SPEAKS BACK articles, they were so phrased in special jargon. But evidently the newsletter had attracted an audience of devoted women who grimly took each item to heart and acted out the deeds asked of them. Right now they were undoubtedly complaining along with the Colonial Safety Committee back on Earth about the hazardous distances separating most of the landing fields on Mars from water sources and human habitation.

They were doing their part in one of the many great fights; and in this particular case, Arnie Kott had managed to gain control of his nausea. For of the twenty or so landing fields on Mars, only one lay within twenty-five miles of a major canal, and that was Samuel Gompers Field which served his own settlement. If by some chance the pressure of the Colonial Safety

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Committee was effective, then all incoming passenger ships from Earth would have to land at Arnie Kott's field, with the revenue received going to his settlement.

It was far from accidental that Mrs. Esterhazy and her newsletter and organization on Earth were advocating a cause which would be of economic value to Arnie. Anne Esterhazy was Arnie's ex-wife

They were still good friends, and still owned jointly a number of economic ventures which they had founded or bought into during their marriage. On a number of levels they still worked together, even though on a strictly personal basis they had no common ground whatsoever. He found her aggressive, domineering, overly-masculine, a tall and bony female with a long stride, wearing low-heeled shoes and a tweed coat and dark glasses, a huge leather purse slung from a strap over her shoulder . . . but she was shrewd and intelligent and a natural executive. As long as he did not have to see her outside of the business context he could get along with her.

The fact that Anne Esterhazy had once been his wife and that they still had financial ties was not well known. When he wanted to get in touch with her he did not dictate a letter to one of the settlement's stenographers. Instead he used a little encoding dictation machine which he kept in his desk, sending the reel of tape over to her by special messenger. The messenger dropped the tape off at an art object shop which Anne owned over in the Israeli settlement, and the answer, if any, was deposited the same way at the office of a cement and gravel works along the Bernard Baruch Canal, which belonged to Arnie's brother-in-law, Ed Rockingham, his sister's husband.

A year ago when Ed Rockingham had built a house for himself and Patricia and their three children he had acquired the unacquirable: his own canal. He had had it built, in open violation of law, for his private use, and it drew water from the great common network. Even Arnie had been outraged.

But there had been no prosecution, and today the canal, modestly named after Rockingham's eldest child, carried water eighty miles out into the desert so that Pat Rockingham could live in a lovely spot and have a lawn, swimming pool and fully irrigated flower garden. She grew especially large camellia bushes, the only ones which had survived the transplanting to Mars. All during the day, sprinklers revolved and sprayed her bushes, keeping them from drying up and dying.

Twelve huge camellia bushes seemed to Arnie Kott an ostentation. He did not get along well with his sister or Ed Rockingham. What had they come to Mars for? he asked himself. To live, at incredible expense and effort, as much as possible as they had back home on Earth. To him it was absurd. Why not remain on Earth?

Mars, for Arnie, was a new place, and it meant a new life, lived with

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a new style. He and the other settlers, both big and small, had made in their time on Mars countless minute adjustments, a process of adaptation through so many stages that they had in fact evolved. They were new creatures now. Their children born on Mars started out like this, novel and peculiar, in some respects enigmatic to their parents. Two of his own boys — his and Anne's — were now living in a settlement camp at the outskirts of Lewistown. When he visited them he could not make them out; they looked toward him with bleak eyes, as if waiting for him to go away. As near as he could tell, the boys had no sense of humor. And yet they were sensitive. They could talk forever about animals and plants, the landscape itself. Both boys had pets, Martian critters that struck him as horrid: praying mantis types of bugs, as large as donkeys. The damn things were called *boxers*, because they were often seen propped up erect and squaring off at one another in a ritual battle which generally ended up with one killing and eating the other. Bert and Ned had gotten their pet boxers trained to do manual chores of a low caliber, and not to eat each other. And the things were companions. Children on Mars were lonely, partly because there were still so few of them and partly because — Arnie did not know. The children had a large-eyed haunted look, as if they were starved for something as yet invisible. They tended to become reclusive, if given half a chance, wandering off to poke about in the wastelands. What they brought back was worthless, to themselves and to the settlements, a few bones or relics of the old nigger civilization, perhaps. When he flew by 'copter, Arnie always spotted some isolated children, one here and another there, toiling away out in the desert, scratching at the rock and sand as if trying vaguely to pry up the surface of Mars and get underneath...

Unlocking the bottom drawer of his desk, Arnie got out the little battery-powered encoding dictation machine and set it up for use. Into it he said, "Anne, I'd like to meet with you and talk. That committee has too many women on it and it's going the wrong way; for example, the last ad in the *Times* worries me because —" He broke off, for the encoding machine had groaned to a stop. He poked at it, and the reels turned slowly and then once more settled back into silence.

Thought it was fixed, Arnie thought angrily. Can't those jerks fix nothing? Maybe he would have to go to the black market and buy, at an enormous price, another. He winced at the thought.

The not too good looking secretary from the pool, who had been sitting quietly across from him waiting, now responded to his nod. She produced her pencil and pad and began as he dictated.

"Usually," Arnie Kott said, "I can understand how hard it is to keep things running, what with no parts hardly, and the way the local weather affects metal and wiring. However, I'm fed up with asking for

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competent repair service on a vital item like my encoding machine. I just got to have it, that's all. So if you guys can't keep it working, I'm going to disband you and withdraw your franchise to practice the craft of repairing within the settlement and I'll rely on outside service for our maintenance." He nodded once more, and the girl ceased writing.

"Shall I take the encoder over to the repair department, Mr. Kott?" she asked. "I'd be happy to, sir."

"Naw," Arnie grumbled. "Just run along."

As she departed, Arnie once more picked up his New York *Times* and again read. Back home on Earth you could buy a new encoder for almost nothing. In fact, back home you could — hell. Look at the stuff advertised . . . from old Roman coins to fur coats to camping equipment to diamonds to rocket ships to crabgrass poison. Jeez!

However, his immediate problem was how to contact his ex-wife without the use of his encoder. Maybe I can just drop by and see her, Arnie said to himself. Good excuse to get out of the office.

Picking up the telephone, he called for a 'copter to be made ready up above him on the roof of the Union Hall, and then he finished off the remains of his breakfast, wiped his mouth hurriedly and set off for the elevator

"Hi, Arnie," the 'copter pilot greeted him, a pleasant-faced young man from the pilot pool.

"Hi, my boy," Arnie said, as the pilot assisted him into the special leather seat which he had had made at the settlement's fabric and upholstery shop. As the pilot got into the seat ahead of him Arnie leaned back comfortably, crossed his legs and said, "Now you just take off and I'll direct you in flight. And take it easy because I'm in no hurry. It looks like a nice day."

"Real nice day," the pilot said, as the blades of the 'copter began to rotate. "Except for that haze over around the F.D.R. Range."

They had hardly gotten into the air when the 'copter's loudspeaker came on. "Emergency announcement. There is a small party of Bleekmen out on the open desert at gyrocompass point 4.65003 dying from exposure and lack of water. Ships north of Lewistown are instructed to direct their flights to that point with all possible speed and give assistance. United Nations law requires all commercial and private ships to respond." The announcement was repeated in the crisp voice of the UN announcer, speaking from the UN transmitter on the artificial satellite somewhere overhead.

Feeling the 'coper alter course, Arnie said, "Aw, come on, my boy."

"I have to respond, sir," the pilot said. "It's the law."

Chrissakes, Arnie thought with disgust. He made a mental note to have the boy sacked or at least suspended as soon as they got back from their trip.

Now they were above the desert, moving at good speed toward the intersect which the UN announcer had given. Bleekmen niggers, Arnie thought. We have to drop everything we're doing to bail them out,

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the damn fools. Can't they trot across their own desert? Haven't they been doing it without our help for five thousand years?

IV

As Jack Bohlen started to lower his Yee company repairship toward McAuliff's dairy ranch below, he heard the UN announcer come on with the emergency notification, the like of which Bohlen had heard many times before and which never failed to chill him.

"... party of Bleekmen out on the open desert," the matter-of-fact voice declared. "Dying from exposure and lack of water. Ships north of Lewistown —"

I've got it, Jack Bohlen said to himself. He cut his mike on and said: "Party of Bleekmen sighted by gyrocompass point 4.65003. Am ready to respond at once. Should reach them in two or three minutes." He swung his 'copter south, away from McAuliff's ranch, getting a golden-moment sort of satisfaction at the thought of McAuliff's indignation right now.

No one had less use for the Bleekmen than did the big ranchers. The poverty-stricken nomadic natives were constantly showing up at the ranches for food, water, medical help and sometimes just a plain old-fashioned handout, and nothing seemed to madden the prosperous dairymen more than to be used by the creatures whose land they had appropriated.

Another 'copter was responding, now The pilot was saying, "I am just outside Lewistown at gyrocompass point 4.78995 and will respond as soon as possible. I have rations aboard including fifty gallons of water." He gave his identification and then rang off.

The dairy ranch with its cows fell away to the north, and Jack Bohlen gazed intently down at the open desert once more, seeking to catch sight of the party of Bleekmen.

Sure enough, there they were. Five of them, in the shade cast by a small hill of stone. They were not moving. Possibly they were already dead. The UN satellite, in its swing across the sky, had discovered them and yet it could not help them. Their mentors were powerless. And we who can help them — what do we care? Jack thought. The Bleekmen were dying out anyhow, the remnants getting more tattered and despairing every year. They were wards of the UN, protected by them. Some protection, Jack thought.

But what could be done for a waning race? Time had run out for the natives of Mars long before the first Soviet ship had appeared in the sky with its television cameras grinding away, back in the '60s. No human group had conspired to exterminate them. It was not necessary. And anyhow they had been a vast curiosity, at first. Here was a discovery worth the billions spent in the task of reaching Mars. Here was an extra-terrestrial race.

He landed the 'copter on the flat sand close by the party of Bleekmen, switched off the blades, opened the door and stepped out.

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The hot morning sun beat down on him as he walked across the sand toward the unmoving Bleekmen. They were alive. They had their eyes open and were watching him.

"Rains are falling from me onto your valuable persons," he called to them, the proper Bleekman greeting in the Bleeky dialect.

Close to them now he saw that the party consisted of one wrinkled old couple, a young male and female, no doubt husband and wife, and their infant. A family, obviously, which had set out across the desert alone on foot, probably seeking water or food. Probably the oasis at which they had been subsisting had dried up. It was typical of the plight of the Bleekmen, this conclusion to their trek. Here they lay, unable to go on any further. They had withered away to something resembling heaps of dried vegetable matter, and they would have died soon had not the UN satellite spotted them.

Rising to his feet slowly, the young Bleekman male genuflected and said in a wavering, frail voice, "The rains falling from your wonderful presence envigors and restores us Mister."

Jack Bohlen tossed his canteen to the young Bleekman, who at once knelt down, unscrewed the cap and gave it to the supine elderly couple. The old lady seized it and drank from it.

The change in her came at once. She seemed to swell back into life, to change from the muddy gray color of death before his eyes.

"May we fill our eggshells?" the young Bleekman male asked Jack. Lying upright on the sand were several paka eggs, pale hollow shells which Jack saw were completely empty. The Bleekman transported water in these shells; their technical ability was so slight that they did not even possess clay pots. And yet, he reflected, their ancestors had constructed the great canal system.

"Sure," he said. "There's another ship coming with plenty of water." He went back to his 'copter and got his lunchpail. Returning with it, he handed it to the Bleekman male. "Food," he explained. As if they didn't know; already the elderly couple were on their feet, tottering up with their hands stretched out.

Behind Jack, the roar of a second 'copter grew louder. It was landing, a big two-person 'copter that now coasted up and halted, its blades slowly spinning.

The pilot called down, "Do you need me? If not I'll go on."

"I don't have much water for them," Jack said

"Okay," the pilot said, and switched off his blades. He hopped out, lugging a five-gallon can. "They can have this."

Together, Jack and the pilot stood watching the Bleekmen filling their eggshells from the can of water. Their possessions were not much, a quiver of poisoned arrows, an animal hide for each of them. The two women had their pounding blocks, their sole possession of value: without the block they were not fit women, for on it they prepared ei-

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ther meat or grain, whatever food their hunt brought them. And they had a few cigarettes.

"My passenger," the young pilot said in a low voice in Jack's ear, "isn't too keen about the UN being able to compel us to stop like this. But what he doesn't realize is they've got that satellite up there and they can see if you fail to stop. And it's a hell of a big fine."

Jack turned and looked up into the parked 'copter. He saw seated inside it a short, heavy-set man with a bald head, a well-fed, self-satisfied looking man who gazed out sourly, paying no attention to the five Bleekmen.

"You have to comply with the law," the pilot said in a defensive voice. "It'd be me who they'd sock with the fine."

Walking over to the ship, Jack called up to the big bald-headed man seated within, "Doesn't it make you feel good to know you saved the lives of five people?"

The big bald-headed man looked down at him and said, "Five niggers, you mean. I don't call that saving five people. Do you?"

"Yeah, I do," Jack said. "And I intend to continue doing so."

"Go ahead, call it that," the big bald-headed man said. Flushing, he glanced over at Jack's 'copter, read the markings on it. "See where it gets you."

Coming over beside Jack, the young pilot said hurriedly, "That's Arnie you're talking to. Arnie Kott." He called up, "We can leave now, Arnie." Climbing up, the pilot disappeared inside the 'copter, and once more the blades began to turn.

The 'copter rose into the air, leaving Jack standing alone by the five Bleekmen. They had now finished drinking and were eating from the lunchpail which he had given them. The empty water can lay off to one side. The paka eggshells had been filled and were now stoppered. The Bleekmen did not glance up as the 'copter left. They paid no attention to Jack, either; they murmured among themselves in their dialect.

"What's your destination?" Jack asked them.

The young Bleekman named an oasis very far to the south.

"You think you can make it?" Jack asked. He pointed to the old couple. "Can they?"

"Yes, Mister," the young Bleekman answered "We can make it now, with the food and water yourself and the other Mister gave us."

I wonder if they can, Jack said to himself. Naturally they'd say it, even if they knew it wasn't true. Racial pride, I guess.

"Mister," the young Bleekman said, "we have a present for you because you stopped." He held out something to Jack.

They had so little that he could not believe they had anything to spare. He held his hand out, however, and the young Bleekman put something small and cold into it, a dark, wrinkled, dried bit of substance that looked to Jack like a section of tree root.

"It is a water witch," the Bleekman said. "Mister, it will bring you

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water, the source of life, any time you need."

"It didn't help you, did it?" Jack said.

With a sly smile the young Bleekman said, "Mister, it helped; it brought you."

"What'll you do without it?" Jack asked.

"We have another. Mister, we fashion water witches." The young Bleekman pointed to the old couple "They are authorities."

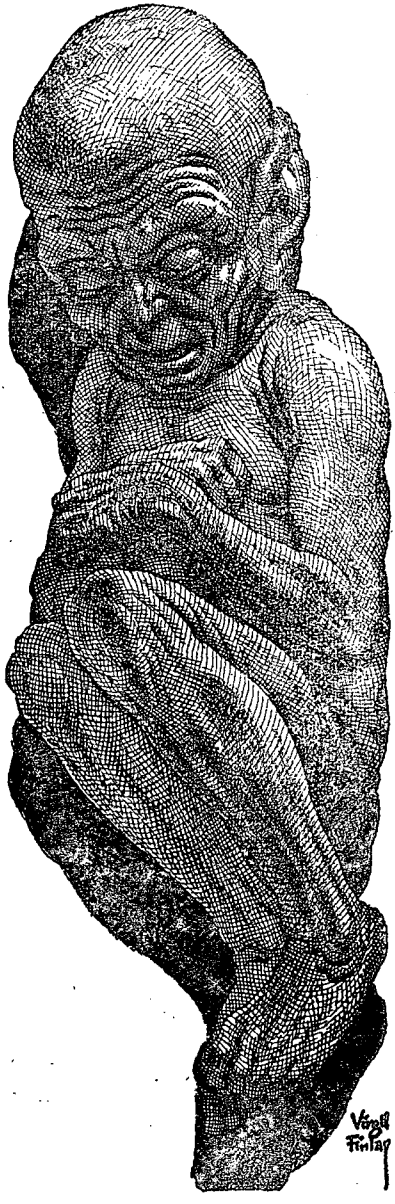
More carefully examining the water witch, Jack saw that it had a face and vague limbs. It was mummified, once a living creature of some sort; he made out its drawn-up legs, its ears . . . he shivered. The face was oddly human, a wizened, suffering face, as if it had been killed while crying out.

"How does it work?" he asked the young Bleekman.

"Formerly, when one wanted water one dampened the water witch in a way, and she came to life. Now we do not do that, Mister. We have learned from you Misters that to do this is wrong. So we spit on her instead, and she hears that, too, almost as well. It wakes her and she opens her eyes and looks around, and then she opens her mouth and calls the water to her. As she did with you, Mister, and that other Mister, the big one who sat and did not come down, the Mister with no hair on his head."

"That Mister is a powerful Mister," Jack said. "He is monarch of the plumbers' union settlement, and he owns all of Lewistown."

"That may be," the young Bleek-



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man said. "If so, we will not stop at Lewistown because we could see that the Mister with no hair did not like us. We did not give him a water witch in return for his water, because he did not want to give us water. His heart was not with him in that deed, it came from his hands only."

Jack said good-by to the Bleekmen and got back into his 'copter. A moment later he was ascending; below, the Bleekmen waved solemnly.

I'll give the water witch to David, he decided. When I get home at the end of the week. He can dampen it however he prefers, to his heart's content.

V

Norbert Steiner had a certain freedom to come and go as he pleased, because he was self-employed. In a small iron building outside of Bunchewood Park he manufactured health foods, entirely made from domestic plants and minerals, with no preservatives or chemical sprays or non-organic fertilizers. A firm at Bunchewood Park packaged his products for him in attractive professional-type boxes, cartons, jars and envelopes, and then Steiner drove about Mars selling them direct to consumer.

His profit was fair, because after all he had no competition. His was the only health food business on Mars.

And then, too, he had a sideline. He imported from Earth various gourmet food items such as truffles, goose liver pate, caviar, kangaroo tail soup, Danish blue cheese, smoked oysters, quail eggs, rum babas, all of which were illegal on Mars, due to the attempt by the UN to force the colonies to become self-sufficient foodwise. The UN food experts claimed that it was unsafe to transport food across space, due to the chance of harmful radiation contaminating it. But Steiner knew better. The actual reason was their fears of the consequences to the colonies in case of war back Home. Food shipments would cease, and unless the colonies were self-sufficient they probably would starve out of existence within a short time.

While he admired their reasoning, Steiner did not wish to acquiesce in it. A few cans of French truffles imported on the sly would not cause the dairy ranchers to stop trying to produce milk, or the hog, steer and sheep ranchers from keeping on with the struggle to make their farm pay. Apple and peach and apricot trees would still be planted and tended, sprayed and watered, even if glass jars of caviar showed up in the various settlements at twenty dollars each.

At this moment, Steiner was inspecting a shipment of tins of halvah, a Turkish pastry, which had arrived the night before aboard the self-guiding ship which shuttled between Manila and the tiny field in the wastelands of the F.D.R. Mountains which Steiner had constructed, using Bleekmen as laborers. Halvah sold well especially in New Israel. Steiner, inspecting the tins for signs of damage, estimated that he could

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get at least five dollars for each one. And then also old Arnie Kott at Lewistown took almost anything sweet that Steiner could lay his hands on plus cheeses and canned fish of every kind, not to mention the Canadian smoked bacon which showed up in five-pound tins, the same as Dutch hams. In fact, Arnie Kott was his best single customer.

The storage shed, where Steiner now sat, lay within sight of his small private, illegal landing field. Upright on the field stood the rocket which had come in last night. Steiner's technician — he himself had no manual ability of any sort — was busy preparing it for its return flight to Manila. The rocket was only twenty feet high, but it was Swiss-made and quite stable. Above, the ruddy Martian sun cast elongated shadows from the peaks of the surrounding range, and Steiner had turned on a kerosene heater to warm his storage shed. The technician, seeing Steiner look out through the window of the shed, nodded to indicate that the rocket was ready for its return load.

Steiner put down his tins of halvah temporarily. Taking hold of the handtruck, he began pushing the load of cartons through the doorway of the shed and out onto the rocky ground.

"That looks like over a hundred pounds," his technician said critically, as Steiner came up pushing the handtruck.

"Very light cartons," Steiner said. They contained a dried grass which, back in the Philippines, was processed in such a way that the end result very much resembled hasish. It was smoked in a mixture with ordinary Virginia burley tobacco, and got a terrific price in the United States. Steiner had never tried the stuff himself. To him, physical and moral health were combined. He believed in his health foods, and neither smoked nor drank.

Together he and Otto loaded the rocket with its cargo, sealed it, and then Otto set the guidance system's clock. In a few days Jose Pesquito back Home at Manila would be unloading the cargo, going over the order form included and assembling Steiner's needs for the return trip.

"Will you fly me back with you?" Otto asked.

"I'm going first to New Israel," Steiner said.

"That's okay. I've got plenty of time."

On his own, Otto Zitte had once operated a small black market business. He dealt exclusively in electronic equipment, components of great fragility and small size, which are smuggled in aboard the common carriers operating between Earth and Mars. And at former times he had tried to import such prize black market items as typewriters, cameras, tape recorders, furs and whiskey, but competition had driven him out. Trade in those necessities of life, selling on a mass basis through the colonies, had been taken over by the big professional black market operators who had enormous capital to back them up and their own full-scale transportation system. And anyhow, Otto's heart was not

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in it. He wanted to be a repairman. In fact, he had come to Mars for that purpose, not knowing that two or three firms monopolized the repair business, operating like exclusive guilds, such as the Yee Company, for whom Steiner's neighbor, Jack Bohlen, worked. Otto had taken the aptitude tests but he was not good enough. Therefore, after a year or so on Mars, he had turned to working for Steiner and running his small import operation. It was humiliating for him, but at least he was not doing manual labor on one of the colonies' work gangs, out under the sun reclaiming the desert.

As Otto and Steiner walked back to the storage shed, Steiner said, "I personally can't stand those Israelis, even though I have to deal with them all the time. They're unnatural, the way they live, in those barracks, and always out trying to plant orchards, oranges or lemons, you know. They have the advantage over everybody else because back home they lived almost like we live here, with desert and hardly any resources."

"True," Otto said. "But you have to hand it to them. They really hustle. They're not lazy."

"And not only that," Steiner said, "they're hypocrites regarding food. Look at how many cans of non-kosher meat they buy from me. None of them keep the dietary laws."

"Well, if you don't approve of them buying smoked oysters, don't sell to them," Otto said.

"It's their business, not mine," Steiner said.

He had another reason for visiting New Israel, a reason which even Otto did not know about. A son of Steiner's lived there, in a special camp for what were called "anomalous children." The term referred to any child who differed either physically or psychologically from the norm to the extent that he could not be educated in the Public School. Steiner's son was autistic, and for three years the instructor at the camp had been working with him trying to bring him into communication with the human culture into which he had been born.

To have an autistic child was a special shame, because the psychologists believed that the condition came from a defect in the parents, usually a schizoid temperament. Manfred Steiner, age ten, had never spoken a word. He ran about on tiptoe, avoiding people as if they were sharp-pointed and dangerous. Physically, he was a large healthy blond-haired boy, and for the first year or so the Steiners had rejoiced in having him. But now — even the instructor at Camp B-G could offer little hope. And the instructor was always optimistic. It was her job.

"I may be in New Israel all day," Steiner said, as he and Otto loaded the cans of halvah into the 'copter. "I have to visit every damn kibbutz in the place, and that takes hours."

"Why don't you want me along?" Otto demanded, with hot anger.

Steiner shuffled his feet, hung his head and said guiltily, "You misunderstand. I'd love to have company, but —" For an instant he

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verged on telling Otto the truth. "I'll take you to the tractor bus terminal and drop you off; okay?" He felt weary. Probably when he got to Camp B-G he would find Manfred just the same, never meeting anyone's eye, always darting about on the periphery, more like a taut, wary animal than a child .... it was hardly worth going, but still he went.

In his own mind, Steiner blamed it all on his wife. When Manfred was a baby, she had never talked to him or shown him any affection. Having been trained as a chemist, she had an intellectual, matter-of-fact attitude, inappropriate in a mother. She had bathed and fed the baby as if he were a laboratory rat. She kept him clean but had never sung to him, laughed with him, had not really used language to or with him. So naturally he had become autistic. What else could he do? Steiner, thinking about it, felt grim. So much for marrying a woman with a master's degree. When he thought of the Bohlen boy next door, yelling and playing — but look at Silvia Bohlen. She was a genuine mother and woman, vital, physically attractive, *alive*. True, she was domineering and selfish. She had a highly-developed sense of what was hers. But he admired her for that. She was not sentimental; she was strong. For instance, consider the water question, and her attitude. It was not possible to break her down, even by alleging that his own water tank had leaked out their two weeks' supply. Thinking about that, Steiner smiled ruefully. Silvia Bohlen hadn't been taken in even for a moment.

Otto said, "Drop me off at the bus terminal, then."

With relief, Steiner said, "Good enough. And you won't have to endure those Israelis."

Eying him, Otto said, "I told you, Norbert, I don't mind them."

Together, they entered the 'copter, and Steiner seated himself at the controls and started the engine. He said nothing more to Otto.

As he set his 'copter down at Weizmann Field north of New Israel, Steiner felt guilty that he had talked badly about the Israelis. He had done it as part of his speech designed to dissuade Otto from coming along with him, but nevertheless it was not right. It went contrary to his authentic feelings. Shame, he realized. That was why he had said it: shame because of his defective son at Camp B-G. What a powerful drive it was, it could make a man say anything.

Without the Israelis, his son would be uncared for. No other facilities for anomalous children existed on Mars, although there were dozens of such institutions back Home, like every other facility one could think of. And the cost of keeping Manfred at the camp was so low as to be a mere formality.

So, as he parked his 'copter and got out, Steiner felt his guilt grow until he wondered how he could face the Israelis. It seemed to him that, God forbid, they might be able to read his mind, might somehow intuit what he said about them when he was elsewhere.

However, the Israeli field person-

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nel greeted him pleasantly, and his guilt began to fade. Evidently it did not show after all. Lugging his heavy suitcases, he crossed the field to the parking lot where the tractor bus waited to take passengers into the central business district.

He had already boarded the bus and was making himself comfortable when he remembered that he had not brought any present for his son.

Miss Milch, the instructor, had told him always to bring a gift, and in particular a durable object by which Manfred could recall his father after he had left. I'll just have to stop somewhere, Steiner said to himself. Buy a toy, a game perhaps. And then he remembered that one of the parents who visited her child at Camp B-G had a gift shop in New Israel. Mrs. Esterhazy. He could stop there. Mrs. Esterhazy had seen Manfred and understood about the anomalous children in general. She would know what to give him, and there would be no embarrassing questions such as, How old is the boy?

At the stop nearest the gift shop he got off the bus and walked up the sidewalk, enjoying the sight of small well kept stores and offices. New Israel in many ways reminded him of Home. It was a true city, more so than Bunchewood Park itself or Lewistown. Many people could be seen, most of them hurrying as if they had business to conduct. He drank in the atmosphere of commerce and activity.

There ahead lay the gift shop with its modern sign and sloping glass windows. Except for the Martian shrub growing in the window-box, it could have been a store in downtown Berlin. He entered, and found Mrs. Esterhazy standing at the counter, smiling as she recognized him. She was an attractive matronly woman, in her early forties, with dark hair and always well-dressed, always looking fresh and intelligent. As everyone knew, Mrs. Esterhazy was terribly active in civic affairs and politics; she put out a newsletter and belonged to one committee after another.

That she had a child in camp B-G was a secret known only to a few of the other parents and of course the staff at the camp. It was a young child, only three, suffering from one of the formidable physical defects associated with exposure to gamma rays during its intrauterine existence. He had seen it only once. There were many sobering anomalies at Camp B-G. He had come to accept them.

At first it had startled him, the Esterhazy child; so small and shriveled, with enormous eyes, like a lemur. It had peculiar webbed fingers, as if it had been fashioned for an aquatic world. He had the feeling about it that it was astonishingly acute in its perceptions. It had studied him with deep intensity, seeming to reach some depth in him usually inaccessible, perhaps even to himself ... it had seemed to reach out somehow and probe his secrets and then it had withdrawn, accepting him on the basis of what it had picked up.

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The child, he had surmised, was a Martian, that is, born on Mars, to Mrs. Esterhazy and some man who was not her husband, since she no longer had a husband. That fact he had picked up from her in conversation. She announced it calmly, making no bones about it. She had been divorced for a number of years. Obviously, then, the child at Camp B-G had been born out of wedlock, but Mrs. Esterhazy, like so many modern women, did not consider that a disgrace. Steiner shared her opinion.

Setting down his heavy suitcases, Steiner said, "What a nice little shop you have here, Mrs. Esterhazy."

"Thank you," she said, coming around from behind the counter. "What can I do for you, Mr. Steiner? Are you here to sell me yogurt and wheat germ?" Her dark eyes twinkled.

"I need a present for Manfred," Steiner said.

A soft, compassionate expression appeared on her face. "I see. Well —" She moved away from him, toward one of the counters. "I saw your son the other day, when I was visiting B-G. Has he shown any interest in music? Often autistic children enjoy music."

"He's fond of drawing. He paints pictures all the time."

She picked up a small wooden flute-like instrument. "This is locally made. And very well made, too." She held it out to him.

"Yes," he said. "I could get this for him."

"Miss Milch is utilizing music as a method of reaching the autistic children at B-G," Mrs. Esterhazy said as she went to wrap up the wooden flute. "The dance, in particular." She hesitated, then. "Mr. Steiner, you know that I'm in constant touch with the political scene back Home. I — there's a rumor that the UN is considering —" She lowered her voice, her face pale. "I do so hate to inflict suffering on you, Mr. Steiner, but if there is any truth in this, and there certainly seems to be..."

"Go ahead." But he wished now that he had not come in. Yes, Mrs. Esterhazy was in touch with important happenings, and it made him uneasy just to know that, without hearing anything more.

Mrs. Esterhazy said, "There's supposed to be a measure under debate at the UN right now, having to do with anomalous children." Her voice shook. "It would require the closing of Camp B-G."

After a moment he was able to say, "But why?" He stared at her.

"They're afraid — well, they don't want to see what they call 'defective stock' appearing on the colonial planets. They want to keep the race pure. Can you understand that? I can, and yet I — well, I can't agree. Probably because of my own child. No, I just can't agree. They're not worried about the anomalous children at Home, because they don't have the aspirations for themselves that they do for us. You have to understand the idealism and anxiety which they have about us. Do you remember how you felt before you

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emigrated here with your family? Back Home they see the existence of anomalous children on Mars as a sign that one of Earth's major problems has been transplanted into the future. Because we are the future, to them, and —"

Steiner interrupted, "And you're certain about this bill?"

"I feel certain." She faced him, her chin up, her intelligent eyes calm. "We can't be too careful. It would be dreadful if they closed Camp B-G and —" She did not finish. In her eyes he read something unspeakable. The anomalous children, his boy and hers, would be killed in some scientific, painless, instantaneous way. Did she mean that?

"Say it," he said.

Mrs. Esterhazy said, "The children would be put to sleep."

Revolted, he said, "Killed, you mean."

"Oh," she said, "how can you say it like that, as if you didn't care?" She gazed at him in horror.

"Christ," he said with violent bitterness, "if there's any truth in this —" But he did not believe her. Because, perhaps, he didn't want to? Because it was too ghastly? No, he thought. Because he did not trust her instincts, her sense of reality.

She had picked up some garbled hysteria. Perhaps there was a bill directed toward some tangential aspect of this; it might affect Camp B-G and its children in some fashion. But they — the parents of anomalous children — had always lived under that cloud. They had read of the mandatory sterilizations of both parents and offspring in cases where it was proved that the gonads had been permanently altered, generally in cases of exposure to gamma radiation in unusual mass quantity.

"Who in the UN are authors of this bill?" he asked.

"There are six members of the In-planet Health and Welfare Committee who are supposed to have written the bill." She began writing. "Here are their names. Now, Mr. Steiner, what we'd like you to do is to write to these men, and have anybody you know who —"

He barely listened. He paid for his flute, thanked her, accepted the folded piece of paper, and made his way out of the gift shop.

Goddam, how he wished he hadn't gone in there! Did she enjoy telling such things? Wasn't there trouble enough in the world as it was, without old wives' tales being peddled by middle-aged females who should not have meddled with public affairs in the first place?

But in him a quiet voice said: *She may be right. You have to face it.* Gripping his heavy suitcases he walked on, confused and frightened, hardly aware of the small new shops which he passed as he hurried toward Camp B-G and his waiting son.

VI

There, when he entered the solarium, the great glass-dome sunroom of Camp Ben-Gurion, stood young sandy-haired Miss Milch in her work smock and sandals,

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with clay and paint splattered on her, a hectic expression knitting her eyebrows. She tossed her head, wiped back her tousled hair from her face and came toward him. "Hello, Mr. Steiner. What a day we've had! Two new children, and one of them a holy terror."

"Miss Milch," he said, "I was talking to Mrs. Esterhazy at her shop just now —"

"She told you about the supposed bill at the UN?" Miss Milch looked tired. "Yes, there is such a bill. Anne gets every sort of inside piece of news, although how she does it I have no idea. Try to keep from showing any agitation around Manfred, if you possibly can. He's been upset by the new arrivals, today." She started off, to lead Mr. Steiner from the solarium down the corridor to the playroom in which his son would be found, but he hurried after her, halting her.

"What can we do about this bill?" he demanded breathlessly. He set down his suitcases, holding now only the paper bag in which Mrs. Esterhazy had put the wooden flute.

"I don't know that we can do anything," Miss Milch said. She went on slowly to the door and opened it. The sound of children's voices came shrill and loud to their ears. "Naturally, the authorities at New Israel and back Home in Israel itself have made furious protests. So have several other governments. But so much of this is secret. The bill is secret. It all has to be done sub rosa, so they won't start a panic. It's such a touchy subject. Nobody really knows what public sentiment is on this — or if it should be listened to." Her voice, weary and brittle, dragged, as if she were running down. But then she seemed to perk up. She patted him on the shoulder. "I do think the worst they would do, once they closed B-G, is deport the anomalous children back Home. I don't think they'd ever go so far as to destroy them."

Steiner said thickly, "To camps back on Earth."

"Let's go and find Manfred," Miss Milch said. "All right? I think he knows this is the day you come. He was standing by the window, but of course he does that a lot."

Suddenly, to his own surprise, he burst out in a choked voice, "I wonder if maybe they might be right. What use is it to have a child that can't talk or live among people?"

Miss Milch glanced at him but said nothing.

"He'll never be able to hold a job," Steiner said. "He'll be a burden on society like he is now. Isn't that the truth?"

"Autistic children still baffle us," Miss Milch said. "By what they are and how they got that way, and by their tendency to begin to evolve mentally, all at once, for no apparent reason, after years of complete failure to respond."

"I think I can't in good conscience oppose this bill," Steiner said. "Not after thinking it over. Now that the first shock is over. It would be fair. I feel it's fair." His voice shook.

"Well," Miss Milch said, "I'm glad you didn't say that to Anne Esterhazy, because she'd never let you go; she'd be after you making speeches

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at you until you came around to her side." She held open the door to the big play room. "Manfred is over in the corner."

Seeing his son from a distance, Steiner thought, You would never know to look at him. The large well-formed head, the curly hair, the handsome features ... the boy was bent over, absorbed in some object which he held. A genuinely good-looking boy, with eyes that shone sometimes mockingly, sometimes with glee and excitement ... and such terrific coordination. The way he sprinted about, on the tips of his toes, as if dancing to some unheard music, some tune from inside his own mind.

We are so pedestrian, compared to him, Steiner thought. Leaden. We creep along like snails, while he dances and leaps, as if gravity does not have the same influence on him as it does on us. Could he be made from some new and different kind of atom?

"Hi, Manny," Mr. Steiner said to his son.

The boy did not raise his head or show any sign of awareness; he continued fooling with the object.

I will write the framers of the bill, Steiner thought, and tell them I have a child in the camp. And I agree with them.

His thoughts frightened him.

Murder, toward Manfred. He recognized it. My hatred of him coming out, released by this news. I see why they're debating it in secret; many people have this hate, I bet. Unrecognized inside.

"No flute for you, Manny," Steiner said. "Why should I give it to you, I wonder? Do you give a damn? No," Steiner said. "Emptiness."

While Steiner stood there, tall, slender Doctor Glaub in his white coat, carrying his clipboard, approached. Steiner became suddenly aware of him and started.

"There is a new theory about autism," Doctor Steiner said. "From Bergholzlei, in Switzerland. I wished to discuss it with you, because it seems to offer a new avenue with your son, here."

"I doubt it," Steiner said.

Doctor Glaub did not seem to hear him. He continued, "It assumes a derangement in the sense of time in the autistic individual, so that the environment around him is so accelerated that he cannot cope with it. In fact, he is unable to perceive it properly. As we would be if we faced a speeded-up television program, so that objects whizzed so fast as to be invisible, and sound was a gobbledegook. Do you know? Just extremely high-pitched mishmash. Now, this new therapy would place the autistic child in a closed chamber in which he faced a screen on which filmed sequences were projected slowed down. Do you see? Both sound and video slowed, at last so slow that you, and I would not be able to perceive motion or comprehend the sounds as human speech."

Wearily, Steiner said, "Fascinating. There's always something new, isn't there, in psychotherapy?"

"Yes," Doctor Glaub said, nod-

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ding. "Especially from the Swiss. They're ingenious in comprehending the worldviews of disturbed persons, of encapsulated individuals cut off from ordinary means of communication, isolated. Do you know?"

"I know," Steiner said.

Doctor Glaub, still nodding, then moved on, to stop by another parent, a woman, who was seated with her small girl, both of them examining a cloth picture book.

Hope before the deluge, Steiner thought. Does Doctor Glaub know that any day the authorities back on Earth may close Camp B-G? The good doctor labors on in idiotic innocence, happy in his schemes.

Walking after Doctor Glaub, there was an awkward pause; then he said, "Doctor, I'd like to discuss this new theory a little further."

"Yes, yes," Doctor Glaub said, excusing himself from the woman and her child. He led Steiner over to one side, where they could talk privately. "This concept of time-rates may open a doorway to minds so fatigued by the impossible task of communicating in a world where everything happens with such rapidity that —"

Steiner interrupted, "Suppose the theory works out. How can you help such an individual function? Did you intend him to stay in the chamber with the slowed down picture screen the rest of his life? I think, Doctor, that you're all playing games here. You're not facing reality. All of you at Camp B-G. You're so virtuous. So without guile.

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But the outside world — it's not like that. This is a noble, idealistic place, in here, but you're fooling yourselves. So in my opinion you're also fooling the patients. Excuse me for saying it. This slowed-down closed chamber, it epitomizes your attitude."

Doctor Glaub listened nodding, with an intent expression on his face. "We have practical equipment promised," he said, when Steiner had finished. "From Westinghouse back on Earth. Rapport with others in society is achieved primarily through sound, and Westinghouse has designed for us an audio recorder which picks up the message directed at the psychotic individual. For example, your boy Manfred. Having recorded this message on iron-oxide tape, it replays it almost instantly for him at lower speed, then erases itself and records the next message, with the result that a permanent contact with the outside world, at his own rate of time, is maintained. And later we hope to have in our hands here a video recorder which will present a constant but slowed-down record to him of the visual portion of reality, synchronized with the audio portion. Admittedly, he will be one step removed from contact with reality. And the problem of touch presents difficulties — but I disagree when you say this is too idealistic to be of use. Look at the widespread chemical therapy, not so long ago. Stimulants speeded up the psychotic's interior time-sense so that he could comprehend the stimuli pouring in on him. But as soon as the stimulant wore off, the psychotic's cognition slowed down as its faulty metabolism reestablished itself. Do you know? Yet we learned a good deal from that; we knew that psychosis has a chemical basis, not a psychological basis. Sixty years of erroneous notions were upset in a single experiment, that of sodium amytal."

"Dreams," Steiner interrupted. "You will never make contact with my boy." Turning, he walked off, leaving Doctor Glaub.

From Camp B-G he went by bus to a swanky restaurant, the Red Fox, which always bought a good deal of his wares. After he had finished his business with the owner he sat for a time at the bar, drinking a beer.

The way Doctor Glaub had babbled on. That was the kind of idiocy that had brought them to Mars in the first place. To a planet where a glass of beer cost twice what a shot of Scotch cost, because it had so much more water in it.

The owner of the Red Fox, a small, bald, portly man wearing glasses, seated himself next to Steiner and said, "Why you looking so glum, Norb?"

Steiner said, "They're going to close down Camp B-G."

"Good," the owner of the Red Fox said. "We don't need those freaks here on Mars. It's bad advertising."

"I agree," Steiner said, "at least to a certain extent."

"It's like those babies with seal flippers back in the '60s, from that drug. They should have destroyed all of them. There's plenty of healthy

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normal children born, why spare the others? If you had a kid with extra arms or no arms, deformed in some way, you wouldn't want it kept alive, would you?"

"No," Steiner said. He did not say that his wife's brother back on Earth was a phocomelus. He had been born without arms and made use of superb artificial ones built for him by a Canadian firm which specialized in such equipment.

In fact he said nothing to the little portly man. He drank his beer and stared into the bottles behind the bar. He did not like the man at all, and he had never told him about Manfred. He knew the man's deep-seated prejudice. Nor was he unusual. Steiner could summon up no resentment toward him; he merely did not want to discuss it.

"That was the beginning," the little portly man said. "Those babies born in the early '60s. Are there any of them at Camp B-G? I've never set foot inside there and I never will."

Steiner said, "How could they be at B-G? They're hardly anomalous. Anomalous means one of a kind."

"Oh, yeah," the little portly man admitted. "I see what you mean. Anyhow, if they'd destroyed them years ago we wouldn't have such places as B-G, because in my mind there's a direct link between the monsters born in the '60s and all the freaks supposedly born due to radiation ever since. I mean, it's all due to substandard genes, isn't it? Now, I think that's where the Nazis were right. They saw the need of weeding out the inferior genetic strains as long ago as 1930. They saw —"

"My son," Steiner began, then stopped. He realized what he had said. The portly man stared at him.

"My son in there," Steiner at last went on, "means as much to me as your son does to you. I know that someday he will emerge into the world once more."

"Let me buy you a drink, Norbert," the portly man said, "to show you how sorry I am. I mean, about the way I talked."

Steiner said, "If they close B-G it will be a calamity too great for us to bear, we who have children in there. I can't face it."

"I see what you mean," the little portly man said. "I understand your feeling."

"You are superior to me if you understand how I feel," Steiner said, "because I can make no sense out of it." He set down his empty beer glass and stepped from the stool. "I don't want another drink," he said. "Excuse me. I have to leave." He picked up his heavy suitcases.

"You've been coming in here all this time," the portly man said, "and we talked about that Camp a lot, and you never told me you had a son in there. That wasn't right." He looked angry now.

"Why wasn't it right?"

"Hell, if I had known I wouldn't have said what I said. You're responsible, Norbert. You could have told me, but you deliberately didn't. I don't like that one bit." His face was red with indignation.

Carrying his suitcases, Steiner left the bar.

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"This is not my day," he said aloud. Argued with everybody; have to spend the next visit here making apologies ... if I come back at all. But I have to come back. My business depends on it. And I have to stop at Camp B-G; there is no other way.

Suddenly it came to him that he should kill himself. The idea appeared in his mind full-blown, as if it had always been there, always a part of him. Easy to do it, just crash the 'copter. He thought, I am goddam tired of being Norbert Steiner. I didn't ask to be Norbert Steiner or sell black market food or anything. What is my reason for staying alive? I'm not good with my hands, I can't fix or make anything. I can't use my mind, either, I'm just a salesman. I'm tired of my wife's scorn because I can't keep our water machinery going. I'm tired of Otto who I have to hire because I'm helpless even in my own business.

In fact, he thought, why wait until I can get back to the 'copter? Along the street came a huge, rumbling tractor bus, its sides dull with sand. It had crossed the desert just now, was reaching New Israel from some other settlement. Steiner set down his suitcases and ran out into the street, directly at the tractor bus.

The bus honked; its air brakes screeched. Other traffic halted as Steiner ran with his head down, his eyes shut. Only at the last moment, with the sound of the air horn so loud in his ears that it became unbearably painful did he open his eyes. He saw the driver of the bus gaping down at him, the steering wheel and the number on the driver's cap. And then —

In the solarium at Camp Ben-Gurion, Miss Milch heard the sound of sirens, and she paused in the middle of the Dance of the Sugar Plum Fairy from Tchaikowsky's Nutcracker Suite, which she was playing on the piano for the children to dance to.

"Fire!" one of the little boys said, going to the window. The other children followed.

"No, it's an ambulance, Miss Milch," another boy said, at the window, "going downtown."

Miss Milch resumed playing, and the children, at the sound of the rhythms coming from the piano, straggled back to their places. They were bears at the zoo, cavorting for peanuts. That was what Miss Milch had explained to them to do. That was what the music — to them — suggested and she had let them go ahead and act it out.

Off to one side, Manfred stood heedless of the music, his head down, a thoughtful expression on his face. As the sirens wailed up loudly for a moment, Manfred lifted his head. Noticing that, Miss Milch gasped and breathed a prayer. The boy had heard! She thumped away on the Tchaikowsky music even more loudly than before, feeling exultation. She had been right, for through sound there had come about a contact with the boy. Now Manfred went slowly to the window to look out. All alone he gazed down at the buildings and streets below,

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searching for the origin of the noise which had aroused him, attracted his attention.

Things are not so hopeless after all, Miss Milch said to herself. Wait until his father hears; it shows we must never talk of giving up.

She played on, loudly and happily.

VII

David Bohlen, building a dam of wet soil at the end of his family's vegetable garden under the hot mid-afternoon Martian sun, saw the UN police 'copter settle down and land before the Steiner's house. He knew instantly that something was going on.

A UN policeman in his blue uniform and shiny helmet stepped from the 'copter and walked up the path to the Steiners' front door. When two of the little girls appeared the policeman greeted them. He then spoke to Mrs. Steiner, and then he disappeared on inside and the door shut after him.

David got to his feet and hurried from the garden, across the stretch of sand to the ditch. He leaped the ditch and crossed the patch of flat soil where Mrs. Steiner had tried unsuccessfully to raise pansies, and at the corner of the house he came suddenly onto one of the Steiner girls; she was standing inertly, picking apart a stalk of wur-weed, her face white. She looked as if she were going to be sick, and he said:

"Hey, what's wrong? Why's the policeman talking to your mom?"

The Steiner girl glanced at him and then bolted off, leaving him.

I'll bet I know what it is, David thought. Mr. Steiner has been arrested because he did sonething illegal. He felt excitement and he leaped up and down. I wonder what he did. Turning, he ran back the way he had come, hopped once more across the ditch of water and at last threw open the door to his own house.

"Mom!" he shouted, running from room to room. "Hey, you know how you and Dad always are talking about Mr. Steiner being outside the law, I mean in his work? Well, you know what?"

His mother was nowhere to be found. She must be gone again to visit, he realized. For instance, Mrs. Henessy who lived within walking distance north along the ditch. Often his mom was gone most of the day visiting other ladies, drinking coffee with them and exchanging gossip. Well, they're really missing out, David declared. He ran to the window and looked out, to be sure of not missing anything.

The policeman and Mrs. Steiner had stepped outside now. Both were walking slowly to the police 'copter. Mrs. Steiner held a big handkerchief to her face, and the policeman had hold of her shoulder, as if he was a relative or something. Fascinated, David watched the two of them get into the 'copter. The Steiner girls stood together in a small group, their faces peculiar. The policeman went over and spoke to them, and then he returned to the 'copter. And then he noticed David.

He beckoned to him to come outdoors. David, feeling fright, did so;

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he emerged from the house, blinking in the sunlight, and step by step approached the policeman with his shining helmet and armband and his gun at his waist.

"What's your name, son?" the policeman asked, with an accent.

"David Bohlen." His knees shook.

"Is mother or father home, David?"

"No," he said, "just me."

"When one parent returns, you tell them to keep watch on Steiner children until Mrs. Steiner is back." The policeman started up the motor of the 'copter and the blades began to turn. "You do that, David? Do you understand?"

"Yes sir," David said, noticing that the policeman had on the blue stripe which meant he was Swedish. The boy knew all the identifying marks which the different UN units wore. He wondered how fast the police 'copter could go. It looked like a special fast job, and he wished he could ride in it. He was no longer frightened of the policeman and he wished they could talk more. But the policeman was leaving. The 'copter rose from the ground, and torrents of wind and sand blew around David, forcing him to turn away and put his arm across his face.

The four Steiner girls still stood gathered together, none of them speaking. One, the oldest, was crying; tears ran down her cheeks but she made no sound. The smallest, who was only three, smiled shyly at David.

"You want to help me with my dam?" David called to them. "You can come over. The policeman told me it was okay."

After a moment the youngest Steiner girl came toward him, and then the others followed.

"What did your dad do?" David asked the oldest girl. She was twelve, older than he. "The policeman said you could say," he added.

There was no answer; the girl merely stared at him.

"If you tell me," David said, "I won't tell anyone. I promise to keep it a secret."

Sunbathing out on June Henessy's fenced, envined patio, sipping iced tea and drowsily conversing, Silvia Bohlen heard the radio from within the Henessy house give the late afternoon news. Beside her, June raised herself up and said:

"Say, isn't he the man who lives next door to you?"

"Shhh," Silvia said, intently listening to the announcer. But there was no more, only the brief mention. Norbert Steiner, a dealer in health foods, had committed suicide on a downtown New Israel street by throwing himself in the path of a bus. It was the same Steiner, all right. It was their neighbor. She knew it at once.

"How dreadful," June said, sitting up and fastening the straps of her polka dot cotton halter. "I only saw him a couple of times, but —"

"He was a dreadful little man," Silvia said. "I'm not surprised he did it." And yet she felt horrified. She could not believe it. She got to her feet, saying, "With four chil-

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dren! He left her to take care of four children! Isn't that dreadful? What's going to happen to them? They're so helpless anyhow."

"I heard," June said, "that he deals on the black market. Had you heard that? Maybe they were closing in on him."

Silvia said, "I better go right home and see if there's anything I can do for Mrs. Steiner. Maybe I can take the children for a while." Could it have been my fault? she asked herself. Could he have done it because I refused them that water, this morning? It could be. He was there. He had not yet gone to work.

So maybe it is our fault, she thought. The way we treated them; who of us has ever been really nice to them and accepted them? But they are such dreadful whining people, always asking for help, begging and borrowing ... who could respect them?

Going into the house she changed in the bedroom, to her slacks and t-shirt. June Henessy followed her.

"Yes," June said. "You're right; we all have to pitch in and help where we can. I wonder if she'll stay on or if she'll go back to Earth. I'd go back. I'm practically ready to go back anyhow, it's so dull here."

Getting her purse and cigarettes, Silvia said good-by to June and set out on the walk back down the ditch to her own house. Breathless, she arrived in time to see the police 'copter disappearing into the sky. That was them notifying her, she decided. In the backyard she found David with the four Steiner girls. They were busy playing.

"Did they take Mrs. Steiner with them?" she called to David.

The boy scrambled at once to his feet and came excitedly up to her. "Mom, she went along with him. I'm taking care of the girls."

That's what I was afraid of, Silvia thought. The four girls sat at the dam, still playing a slow-motion, apathetic game with the mud and water, none of them looking up or greeting her. They seemed inert, no doubt from the shock of learning about their father's death. Only the smallest one showed any signs of reviving, and she probably had not comprehended the news in the first place.

Already, Silvia thought, that little man's death has reached out and touched others. The coldness is spreading. She felt the chill in her own heart. And I did not even like him, she thought.

The sight of the four Steiner girls made her quake. Am I going to have to take on these puddingy, plump, vapid, low-class children? she asked herself. The thought thrust its way up, tossing every other consideration aside. *I don't want to!* She felt panic, because it was obvious that she had no choice. Even now they were playing on her land, in her garden. She had them already.

Hopefully, the smallest girl asked, "Miz Bohlen, could we have some more water for our dam?"

Water, always wanting water, Silvia thought. Always leeching at us, as if it's a trait born into them. She ignored the child and said instead to her son, "Come into the house; I want to talk to you."

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Together, they went indoors, where the girls could not overhear.

"David," she said. "Their father is dead. It came over the radio. That's why the police came and took her. We'll have to help out for a while." She tried to smile, but it was impossible. "However much we may dislike the Steiners —"

David burst in, "I don't dislike them, Mom. How come he died? Did he have a heart attack? Was he set on by wild Bleekmen, could that be?"

"It doesn't matter how he happened to die. What we have to think of now is what we can do for those girls." Her mind was empty. She could think of nothing, all she knew was that she did not want to have the girls near her. "What should we do?" she asked David.

"Maybe fix them lunch. They told me they didn't have any; she was just about to fix it."

Silvia went from the house and down the path. "I'm going to fix lunch, girls, for any of you who want it. Over at your house." She waited a moment and then started toward the Steiner house. When she looked back she saw that only the smallest child was following.

The oldest girl said in a tear-choked voice, "No thank you."

"You better eat," Silvia said, but she was relieved. "Come along," she said to the little girl. "What's your name?"

"Betty," the little girl said shyly. "Could I have an egg sandwich? And cocoa?"

"We'll see what there is," Silvia said.

Later, while the child ate her egg sandwich and drank her cocoa, Silvia took the opportunity to explore the Steiner house. In the bedroom she came onto something which interested her: a picture of a small boy with dark, enormous, luminous eyes and curly hair. He looked, Silvia thought, like a despairing creature from some other world, some divine and yet dreadful place beyond their own.

Carrying the picture into the kitchen she asked little Betty who the boy was.

"That's my brother Manfred," Betty answered, her mouth full of egg and bread. Then she began to giggle. Within the giggling a few hesitant words emerged, and Silvia caught the fact that the girls were not supposed to mention their brother to anyone.

"Why doesn't he live with you?" Silvia asked, full of curiosity.

"He's at camp," Betty said. "Because he can't talk."

"What a shame," Silvia said, and girls aren't supposed to mention him; he's one of those anomalous children you hear of but never see. The thought made her sad. Unglimpsed tragedy in the Steiner household; she had never guessed. And it was in New Israel that Mr. Steiner had taken his life. Undoubtedly he had been visiting his son.

Then it has nothing to do with us, she decided as she returned the picture to its place in the bedroom. Mr. Steiner's decision was based on a personal matter. So she felt relieved.

Strange, she thought, how one has

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the immediate reaction of guilt and responsibility, when one hears of a suicide. If only I hadn't done this, or had done that ... I could have averted it. I'm at fault.

And it was not so in this situation, not at all. She was a total outsider to the Steiners, sharing no part of their actual life, only imagining, in a fit of neurotic guilt, that she did so.

"Do you ever see your brother?" she asked Betty.

"I think I saw him last year," Betty said hesitantly. "He was playing tag and there were a lot of other boys bigger than me."

Now, silently, the three older Steiner girls filed into the kitchen and stood by the table. At last the eldest burst out, "We changed our mind, we would like lunch."

"All right," Silvia said. "You can help me crack the eggs and peel them. Why don't you go and get David, and I'll feed him at the same time? Wouldn't that be fun, to all eat together?"

They nodded mutely.

VIII

Walking up the main street of New Israel, Arnie Kott saw a crowd ahead and cars pulled to a halt at the curb. He paused momentarily before turning in the direction of Anne Esterhazy's Contemporary Arts Gift Shop. Something up, he said to himself. Robbery? Street brawl?

However, he did not have time to investigate. He continued on his way and arrived presently at the small modern shop which his ex-wife ran. Hands in his trouser pockets, he sauntered in.

"Anybody home?" he called jovially.

No one there. She must have taken off to see the excitement, Arnie said to himself. Some business sense! Didn't even lock up the store.

A moment later Anne came hurrying breathlessly back into the store. "Arnie," she said in surprise, seeing him. "Oh, my God, do you know what happened? I was just talking to him, not more than an hour ago. And now he's dead." Tears filled her eyes. She collapsed onto a chair, found Kleenex and blew her nose. "It's just terrible," she said in a muffled voice. "And it wasn't an accident. He did it deliberately."

"Oh, so that's what's going on," Arnie said, wishing now that he had gone on and taken a look. "Who do you mean?"

"You wouldn't know him. He has a child at the Camp; that's how I met him." She rubbed her eyes and sat for a time, while Arnie meandered about the store. "Well," she said at last, "what can I do for you? It's nice to see you."

"My goddam encoder broke down," Arnie said. "You know how hard it is to get decent repair service. What could I do but come by? What do you say to having lunch with me? Lock up the store a little while."

"Of course," she said distractedly. "Just let me go wash my face. I feel as if it was me. I saw him, Arnie. The bus rolled right over him; they have such mass, they just can't

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stop. I would like some lunch — I want to get out of here." She hurried to the washroom and disappeared.

Soon the two of them were walking up the sidewalk together.

"Why do people take their own lives?" Anne asked. "I keep thinking I could have prevented it. I sold him a flute for his boy. He still had the flute; I saw it with his suitcases, on the curb. He never gave it to his son. Is that the reason, something to do with the flute? I debated between the flute and —"

"Cut it out," Arnie said. "It's not your fault. Listen, if a man is going to take his life nothing can stop him. And you can't cause a person to do it. It's in his bloodstream, it's his destiny. They work themselves up to doing it years in advance and then it's just like a sudden inspiration. All of a sudden — wham. They do it, see?" He wrapped his arm around her and patted her.

She nodded.

"Now I mean we've got a kid there at Camp B-G, but it doesn't get us down," Arnie went on. "It's not the end of the world, right? We go on. Where do you want to eat? How's that place across the street, that Red Fox? Any good? I'd like some fried prawns, but hell, it's been almost a year since I saw them. This transportation problem has got to be licked or nobody is emigrating."

"Not the Red Fox," Anne said. "I loathe the man who runs it. Let's try that place on the corner. It's new, I haven't ever eaten in there. I hear it's supposed to be good."

As they sat at a table in the restaurant, waiting for their food to come, Arnie went on and developed his point. "One thing when you hear about a suicide, you can be sure the guy knows this: he knows he's not a useful member of society. That's the real truth he's facing about himself. That's what does it, knowing you're not important to anybody. If there's one thing I'm sure of it's that. It's nature's way. The expendable are removed by their own hand. So I don't lose any sleep when I hear of a suicide. And you'd be surprised how many so-called 'natural' deaths here on Mars are actually suicides. I mean, this is a harsh environment, this place weeds out the fit from the unfit."

Anne Esterhazy nodded but did not seem cheered up.

"Now this guy —" Arnie continued.

"Steiner," Anne said.

"Steiner!" He stared at her. "Norbert Steiner, the black market operator?" His voice rose.

"He sold health foods."

"That's the guy!" He was flabbergasted. "Oh, no! Not Steiner." Good grief, he got all his goodies from Steiner; he was utterly dependent on the man.

The waiter appeared with their food.

"This is awful," Arnie said. "I mean, really awful. What am I going to do?" Every party he threw, every time he had a cozy two-person dinner arranged for himself and some girl, for instance Marty or especially of late Doreen . . . it was

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just too goddam much in one day! This and his encoder, both together.

"Don't you think," Anne said, "it might have something to do with him being German? There's been so much sorrow in Germans since those children with the flippers. I've talked to some who've said openly they thought it was God's punishment on them for what was done during the Nazi period. And these weren't religious men, these were businessmen, one here on Mars, the other at Home."

"That damn stupid Steiner," Arni said. "That cabbage head."

"Eat your food, Arnie." She began to unfold her napkin. "The soup looks good."

"I can't eat this slop." He pushed his soup bowl away.

"You're still just like a big baby," Anne said. "Still having your tantrums." Her voice was soft and compassionate.

"Hell," he said, "sometimes I feel like I've got the weight of the entire planet on me. And you call me a baby!" He glared at her in baffled outrage.

"I didn't know that Norbert Steiner was involved in the black market," Anne said.

"Naturally you wouldn't, you and your lady-committees. What do you know about the world around you? That's why I'm here. I read that last ad you had in the *Times* and it stank. You have to stop giving out that crap like you do; it repels intelligent people — it's just for other cranks, like yourself."

"Please," Anne said. "Eat your food. Calm down."

"I'm going to assign a man from my Hall to look over your material before you distribute it. A professional."

"Are you?" she said mildly.

"We've got a real problem. We're not getting the skilled people to come over from Earth any more, the people we need. We're rotting — everybody knows that. We're falling apart."

Smiling, Anne said, "Somebody will take Mr. Steiner's place. There must be other black market operators."

Arnie said, "You're deliberately misunderstanding me so as to make me look greedy and small, whereas actually I'm one of the most responsible members of the entire colonization attempt here on Mars. And that's why our marriage broke down, because of your belittling me out of jealousy and competitiveness. I don't know why I came over here. It's impossible for you to work things out on a rational basis, you have to inflict personalities into everything."

"Did you know there's a bill before the UN to shut Camp B-G?" Anne said calmly.

"No," Arnie said.

"Does it distress you to think of B-G being closed?"

"Hell, we'll give Sam private individual care."

"What about the other children there?"

"You changed the subject," Arnie said. "Listen, Anne, you have to knuckle down to what you call 'masculine domination' and let my people

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edit what you write. Honest to God, it does more harm than good. I hate to say this to your face but it's the truth. You're a worse friend than you would be an enemy, the way you go about things. You're a dabbler! Like most women. You're — irresponsible." He wheezed with wrath. Her face showed no reaction; what he said had no effect on her.

"Can you bring any pressure to bear to help keep B-G open?" she asked. "Maybe we can make a deal. I want to see it kept open."

"A *cause*," Arnie said ferociously.

"Yes."

"You want my blunt answer?"

She nodded, facing him coolly.

"I've been sorry ever since these Jews opened that Camp."

Anne said, "Bless you, honest blunt Arnie Kott, mankind's friend."

"It tells the entire world we've got nuts here on Mars, that if you travel across open space here you're apt to damage your sexual organs and give birth to a monster that would make those German flipper-people look like your next door neighbor."

"You and the gentleman who run the Red Fox."

"I'm just being hard-headedly realistic. We're in a struggle for our life. We've got to keep people emigrating here or we're dead on the vine, Anne. You know that. If we didn't have Camp B-G we could advertise that away from Earth's H-bomb testing contaminated atmosphere there are no abnormal births. I hoped to see that. But B-G spoils it."

"Not B-G. The births themselves."

"No one would be able to check up and show our abnormal births," Arnie said, "without B-G."

"You'd say it, knowing it's not true, if you could get away with it. Telling them back Home that they're safer here —"

"Sure." He nodded.

"That's immoral!"

"No. Listen. You're the immoral one, you and those other ladies by keeping Camp B-G open you're —"

"Let's not argue. We'll never agree. Let's eat and then you go on back to Lewistown. I can't take any more."

They ate their meal in silence.

Doctor Milton Glaub, member of the psychiatric pool at Camp B-G, on loan from the Interplan Truckers Union settlement, sat by himself in his own office once more. He was back from B-G, his stint there over for today. In his hands he held a bill for roof repairs done on his home the month before. He had put off the work — it involved the scraper which kept the sand from piling up — but finally the settlement building inspector had mailed him a thirty-day condemnation notice. So he had contacted the Roofing Maintenance Workers, knowing that he could not pay, but seeing no alternative. He was broke. This was the worst month so far.

If only Jean — his wife — could spend less.

But the solution did not lie there anyhow. The solution was to acquire more patients. The ITU paid him a monthly salary, but for every patient he received an additional fifty-dollar

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bonus. Incentive, it was called. In actuality it meant the difference between debt and solvency. Nobody with a wife and children could possibly live on the salary offered to psychiatrists, and the ITU, as everyone knew, was especially parsimonious.

And yet, Doctor Glaub continued to live in the ITU settlement. It was an orderly community, in some respect much like Earth. New Israel, like the other national settlements, had a charged, explosive quality.

As a matter of fact, Doctor Glaub had once lived in a national colony, the United Arab Republic one, a particularly opulent region in which much vegetation, imported from Home, had been induced to grow. But to him, the constant animosity toward neighboring colonies had been first irritating and then appalling. Men, at their daily jobs, brooded over wrongs committed. The most charming individuals blew up when certain topics were mentioned. And at night the hostility took practical shape. The national colonists lived for the night. Then the research labs, which were scenes of scientific experimentation and development during the day, were thrown open to the public, and infernal machines were turned out — all done with much excitement and glee, and of course national pride.

The hell with them, Doctor Glaub thought. Their lives were wasted. They had simply carried over the old quarrels from Earth, and the purpose of colonization had been forgotten. For instance, in the UN newspaper that morning he had read about a fracas in the streets of the Electrical Workers settlement. The newspaper account implied that the nearby Italian colony was responsible, since several of the aggressors had worn the long waxed mustaches popular in the Italian colony...

A knock at his office door broke his line of thought. "Yes," he said, putting away the roofing bill in the desk drawer.

"Are you ready for Goodmember Purdy?" his wife asked, opening the door in the professional manner that he had taught her.

"Send Goodmember Purdy in," Doctor Glaub said. "Wait a couple of minutes, though, so I can read over his case history."

"Did you eat lunch?" Jean asked.

"Of course. Everybody eats lunch."

"You look wan," she said.

That's bad, Doctor Glaub thought. He went from his office into the bathroom, where he carefully darkened his face with the caramel-colored powder currently in fashion. It did improve his looks, although not his state of mind. The theory behind the powder was that the ruling circles in the ITU were of Spanish and Puerto Rican ancestry, and they were apt to feel intimidated if a hired person had skin lighter than their own. Of course the ads did not put it like that. The ads merely pointed out to hired men in the settlement that "the Martian climate tends to allow natural skin-tone to fade to unsightly white."

It was now time to see his patient.

"Good afternoon, Goodmember Purdy."

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"Afternoon, Doc."

"I see from your file that you're a baker."

"Yeah, that's right."

A pause. "What did you wish to consult with me about?"

Goodmember Purdy, staring at the floor and fooling with his cap, said, "I never been to a psychiatrist before."

"No, I can see here that you haven't."

"There's this party my brother-in-law's giving. I'm not much going to parties."

"Are you compelled to attend?" Doctor Glaub had quietly set the clock on his desk; it ticked away the goodmember's half hour.

"They're sort of throwing it for me. They, uh, want me to take on my nephew as an apprentice so he'll be in the union eventually." Purdy droned on. "— and I been lying awake at night trying to figure out how to get out of it; I mean, these are my relatives and I can't hardly come out and tell them no. But I just can't go. I don't feel good enough to. So that's why I'm here."

"I see," Doctor Glaub said. "Well, you'd better give me the particulars on this party, when and where it is, names of the persons involved, so I can do a right bang-up job while I'm there."

With relief Purdy dug into his coat pocket and brought out a neatly typed document. "I sure appreciate your going in my place, Doc. You psychiatrists take a load off a man's back. I'm not joking when I say I been losing sleep over this." He gazed with grateful awe at the man skilled in the social graces, capable of treading the narrow, hazardous path of complex interpersonal relations which had defeated so many union members over the years.

"Don't worry any further about it," Doctor Glaub said. For after all, he thought, what's a little schizophrenia? That is, you know, what you're suffering from. I'll take the social pressure from you and you can continue in your chronic maladaptive state, at least for another few months. Until the next overpowering social demand is made on your limited capabilities...

As Goodmember Purdy left the office, Doctor Glaub reflected that this certainly was a practical form of psychotherapy which had evolved here on Mars. Instead of curing the patient of his phobias, one became in the manner of a lawyer the actual advocate in the man's place.

Jean called into the office, "Milt, there's a call for you from New Israel. It's Bosley Touvim."

Oh, God, Doctor Glaub thought. Touvim was the President of New Israel; something was wrong. Hurriedly he picked up the phone from his desk. "Doctor Glaub here."

"Doctor," sounded the dark, stern powerful voice, "this is Touvim. We have a death here. A patient of yours, I understand. Will you kindly fly back here and attend to this? Allow me to give you a few details. Norbert Steiner, a West German—"

"He's not my patient, sir," Doctor Glaub interrupted. "However, his

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son is, a little autistic child at Camp B-G. What do you mean, Steiner is dead? For heaven's sake, I was just talking to him this morning. Are you sure it's the same Steiner? If it is, I do have a file on him, on the entire family, because of the nature of the boy's illness; in child autism we feel that the family situation must be understood before therapy can begin. Yes, I'll be right over."

Touvim said, "This is evidently a suicide."

"I can't believe it," Doctor Glaub said.

"For the past half hour I have been discussing this with the staff at Camp B-G. They tell me you had a long conversation with Steiner shortly before he left the Camp. At the inquest our police will want to know what indications of any Steiner gave of a depressed or morbidly introspective mood, what he said that might have given you the opportunity to dissuade him or barring that compel him to undergo therapy. I take it the man said nothing that would alert you to his intentions."

"Absolutely nothing," Doctor Glaub said.

"Then if I were you I wouldn't worry," Touvim said. "Merely be prepared to give the clinical background of the man. Discuss possible motives which might have led him to take his life. You understand."

"Thank you, Mr. Touvim," Doctor Glaub said weakly. "I suppose it is possible he was depressed about his son, but I outlined to him a new therapy. We have very high hopes for it. However, he did seem cynical and shut-in. He did not respond as I would have expected. But suicide!"

What if I lose the B-G assignment? Doctor Glaub was asking himself. I just can't. Working there once a week added enough to his income so that he could imagine — although not attain — financial security. The B-G check at least made the goal plausible.

Didn't it ever occur to that idiot Steiner what effect his death might have on others? Yes, it must have. He did it to get vengeance on us. Paying us back — but for what? For trying to heal his child?

This is a very serious matter in a psychiatrist's profession, he realized. A suicide, especially one close on the heels of a doctor-patient interview. Thank God Mr. Touvim warned me! Even so, the newspapers will pick it up, and all those who want to see Camp B-G closed will benefit from this.

Having repaired the refrigeration equipment at McAuliff's dairy ranch, Jack Bohlen returned to his 'copter, put his tool box behind the seat and contacted his employer, Mr. Yee.

"The School," Mr. Yee said. "You must go there, Jack. I still have no one else to take that assignment."

"Okay, Mr. Yee." He started up the motor of the 'copter, feeling resigned to it.

"A message from your wife, Jack."

"Oh?" He was surprised. His employer frowned on wives of his employees phoning in, and Silvia knew that. Maybe something had happened to David. "Can you tell me what she said?" he asked.

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Mr. Yee said, "Mrs. Bohlen asked our switchboard girl to inform you that a neighbor of yours, a Mr. Steiner, has taken his own life. Mrs. Bohlen is caring for the Steiner children, she wants you to know. She also asked if it was possible for you to come home tonight, but I told her that although we regretted it we could not spare you. You must stay available on call until the end of the week, Jack."

Steiner dead, Jack said to himself. The poor ineffectual sap. Well, maybe he's better off.

"Thank you, Mr. Yee," he said in to the microphone.

As the 'copter lifted from the sparsely-growing pasture, Jack thought, This is going to affect all of us, and deeply. He had a strong and acute feeling. An intuition. I don't believe I ever exchanged more than a dozen words with Steiner at any one time — and yet — there is something enormous about the dead. Death itself has such authority. A transformation as awesome as life itself, and so much harder for us to understand.

He turned the 'copter in the direction of the UN headquarters on Mars, and was on his way to the great self-winding entity of their lives, the unique artificial organism which was their Public School, a place he feared more than any other in his experience away from Home.

IX

Why was it that the Public School un-nerved him? Scrutinizing it from above he saw the duck egg-shaped building, white against the dark, blurred surface of the planet, apparently dropped there in haste. It did not fit into its surroundings.

As he parked in the paved lot at the entrance he discovered that the tips of his fingers had whitened and lost feeling, a sign, familiar to him, that he was under tension. Yet this place did not bother David, who was picked up and flown here three days a week, along with other children of his achievement group. Evidently it was some factor in his own personal makeup. Perhaps, because his knowledge of machines was so great, he could not accept the illusion of the School, could not play the game. For him, the artifacts of the School were neither inert nor alive. They were in some way both.

Soon he sat in a waiting room, his tool box beside him.

From a magazine rack he took a copy of *Motor World,* and heard, with his trained ears, a switch click. The School had noted his presence. It noted which magazine he selected, how long he sat reading and what he next took. It measured him.

A door opened and a middle-aged woman, wearing a tweed suit, smiled at him. "You must be Mr. Yee's repairman."

"Yes," he said, standing.

"So glad to see you." She beckoned him to follow her. "There's been so much fuss about this one Teacher, but it is at the output stage." Striding down a corridor she held a door open for him as he caught up. "The Angry Janitor," she said, pointing.

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He recognized it from his son's description.

"It broke down suddenly," the woman was saying in his ear. "See? Right in the middle of its cycle. It had gone down the street and shouted and then it was just about to wave its fist."

"Doesn't the Master Circuit know —"

"I am the Master Circuit," the middle-aged woman said, smiling at him cheerfully, her steel-rimmed glasses bright with the sparkle in her eyes.

"Of course," he said, chagrined.

"We think it might be this," the woman — or rather the peripatetic extension of the School — said, holding out a folded paper.

Unwadding it, he found a congeries of self-regulating feedback valves.

"This is an authority figure, isn't it?" he said. "Teaches the child to respect property. Very righteous type, as the Teachers go."

"Yes," the woman said.

Manually, he reset the Angry Janitor and restarted it. After a moment of clicking it turned red in the face, raised its arm and shouted, "You boys keep out of here, you understand?"

Watching the whiskery jowls tremble with indignation, the mouth open and shut, Jack Bohlen could imagine the powerful effect it would have on a child. His own reaction was one of dislike. However, this construct was the essence of the successful Teaching Machine. It did a good job, in conjunction with two dozen other constructs placed, like booths in an amusement park, here and there along the corridors which made up the School. He could see the next Teaching Machine, just around the corner; several children stood respectfully in front of it as it delivered its harangue.

"... and then I thought," it was telling them in an affable, informal voice, "my gosh; what is it we folks can learn from an experience like that? Do any of you know? You, Sally."

A small girl's voice: "Um, well, maybe we can learn that there is some good in everybody, no matter how bad they act."

"What do you say, Victor?" the Teaching Machine bumbled on. "Let's hear from Victor Plank."

A boy stammered, "I'd say about what Sally said, that most people are really good underneath if you take the trouble to really look. Is that right, Mr. Whitlock?"

So Jack was overhearing the Whitlock Teaching Machine. His son had spoken of it many times; it was a favorite of his. As he got out his tools, Jack listened to it. The Whitlock was an elderly white-haired gentleman, with a regional accent, perhaps Kansas. He was kindly, and he let others express themselves; he was a permissive variety of Teaching Machine, with none of the gruffness and authoritarian manner of the Angry Janitor; he was, in fact, as near as Jack could tell, a combination of Socrates and Dwight D. Eisenhower.

"Sheep are funny," the Whitlock said. "Now, you look at how they

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behave when you throw some grub over the fence to them, such as corn stalks. Why, they'll spot that from a mile away." The Whitlock chuckled. "They're smart when it comes to what concerns them. And maybe that helps us see what true smartness is. It isn't having read a lot of big books, or knowing long words. It's being able to spot what's to our advantage. It's got to be useful, to be real smartness."

Kneeling down, Jack began unscrewing the back from the Angry Janitor. The Master Circuit of the School stood watching.

This machine, he knew, went through its song-and-dance in response to a reel of instruction tape, but its performance was open to modification at each stage, depending on the behavior of its audience. It was not a closed system. It compared the children's answers with its own tape, then matched, classified and at last responded. There was no room for a unique answer because the Teaching Machine could recognize only a limited number of categories. And yet, it gave a convincing illusion of being alive and viable. It was a triumph of engineering.

Its advantage over a human teacher lay in its capacity to deal with each child individually. It tutored, rather than merely taught. A Teaching Machine could handle up to a thousand pupils and yet never confuse one with the next; for each child its responses altered so that it became a subtly different entity. Mechanical, yes — but almost infinitely complex. The Teaching Machines demonstrated a fact that Jack Bohlen was well aware of: there was an astonishing depth to the so-called "artificial."

Yet he felt repelled by the Teaching Machines. The entire Public School was geared to a task which went contrary to his grain. The School was there not to inform or educate, but to mold along a severely limited line. It was the link to their inherited culture, and it peddled that culture in its entirety to the young. It bent its pupils to it. Perpetuation of the culture was the goal, and any special quirks in the children which might lead them in another way had to be ironed out.

It was a battle, Jack realized, between the composite psyche of the School and the individual psyches of the children. The School held all the key cards.

A child who did not properly respond was assumed to be autistic — that is, oriented along a subjective factor that took precedence over his sense of objective reality. And that child wound up by being expelled by the School. He went, after that, to another sort of school entirely, one designed to rehabilitate him: he went to Camp Ben-Gurion. He could not be taught. He could only be dealt with as ill.

Autism, Jack reflected, as he unscrewed the back of the Angry Janitor, had become a self-serving concept for the authorities who governed Mars. It replaced the older term "psychopath," which in its time had replaced "moral imbecile" which had replaced "criminally insane." And at Camp B-G, the child had a human teacher, or rather *therapist*.

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Ever since his own son David had entered the Public School, Jack had waited to hear the bad news, that the boy could not be graded along the scale of achievement by which the Teaching Machines classified their pupils. However, David had responded heartily to the Teaching Machines, had in fact scored very high. The boy liked most of his Teachers and came home raving about them. He got along fine with even the severe ones and by now it was obvious that he had no problems. He was not autistic, and he would never see the inside of Camp B-G. But this had not made Jack feel better. Nothing, Silvia had pointed out, would make him feel better. Only the two possibilities lay open, the Public School and Camp B-G, and Jack distrusted both. Why? He did not know.

Perhaps it was because there really was such a condition as autism. It was a childhood form of schizophrenia, which a lot of people had. Schizophrenia was a major illness which touched sooner or later almost every family. It meant simply a person who could not live out the drives implanted in him by his society. The reality which the schizophrenic fell away from — or never incorporated in the first place — was the reality of interpersonal living. It was not biological life, or any form of inherited life, but *life which was learned.* It had to be picked up bit by bit from those around one, parents and teachers, authority figures in general . . . from everyone a person came in contact with during his formative years.

The Public School, then, was right to eject a child who did not learn. Because what the child was learning was not merely facts or the basis of a money-making or even useful career. It went much deeper. The child learned that certain things in the culture around him were worth preserving at any cost. His values were fused with some objective human enterprise. And so he himself became a part of the tradition handed down to him; he maintained his heritage during his lifetime and even improved on it. He cared.

True autism was in the last analysis an apathy toward public endeavor. It was a private existence carried on as if the person were the creator of all value, rather than merely the repository of inherited values. And Jack Bohlen, for the life of him, could not accept the Public School with its Teaching Machines as the sole arbiter of what was and what wasn't of value. The values of a society were in ceaseless flux, and the Public School was an attempt to embalm them.

He had long ago decided that the Public School was neurotic. It wanted a world in which there were no surprises. And that was the world of the compulsive-obsessive neurotic; it was not a healthy world at all.

Once, a couple of years ago, he had told his wife his theory. Silvia had listened with a reasonable amount of attention and then she had said, "But you don't see the point, Jack. Try to understand. There are things so much worse than neurosis." Her voice had been low and firm, and he had listened. "We

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are just beginning to find them out. You know what they are. *You've gone through them.*

And he had nodded, because he did know what she meant.

He himself had had a psychotic interlude, in his early twenties. It was common. It was natural. And, he had to admit, it was horrible. It made the fixed, rigid, compulsive-neurotic Public School a reference point by which one could gratefully steer one's course back to mankind and shared reality. It made him comprehend why a neurosis was a deliberate artifact, constructed by the ailing individual, or by a society in crisis. It was an invention arising from necessity.

"Don't knock neurosis," Sylvia had said to him, and he understood. Neurosis was a deliberate stopping, a freezing along the path of life. Because beyond lay —

Every schizophrenic knew what lay there. And every ex-schizophrenic, Jack thought, as he remembered his own episode.

The two men across the room from him gazed at him queerly What had he said? *Herbert Hoover was a much better head of the F.B.I. than Carrington will ever be.* "I know I'm right," he added. "I'll lay you odds." His mind seemed fuzzy, and he sipped at his beer. Everything had become heavy, his arm and the glass itself. It was easier to look down rather than up; he studied the match folder on the coffee table.

"You don't mean Herbert Hoover," Lou Notting said. "You mean J. Edgar."

Jack winced in dismay. Yes, he had said Herbert Hoover, and until they had pointed it out it seemed okay. What's the matter with me? he wondered. I feel like I'm half asleep. And yet he had gone to bed at ten the night before, slept almost twelve hours. "Excuse me," he said. "Of course I meant..." He felt his tongue stumble. With care he said, "J. Edgar Hoover." But his voice sounded blurred and slowed-down, like a turntable losing its momentum And now it was almost impossible for him to raise his head; he was falling asleep where he sat, there in Notting's living room. And yet his eyes weren't closing — he found when he tried that he couldn't close them. His attention had become riveted on the match folder. Close before striking, he read. Can you draw this horse? First art lesson free, no obligation. Turn over for free enrollment blank. Unblinking, Notting and Fred Clarke argued about abstract ideas such as the curtailment of liberties, the democratic process. He heard all the words perfectly clearly, and he did not mind listening. But he felt no desire to argue, even though he knew they both were wrong. He let them argue on; it was easier. It simply happened. And he let it happen.

"Jack's not with us tonight," Clarke was saying. With a start, Jack Bohlen realized they had turned their attention on him. He had to do or say something, now.

"Sure I am," he said. It cost him terrific effort; it was like rising up out of the sea. "Go on, I'm listening."

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"God, you're like a dummy," Notting said. "Go home and go to bed, for chrissakes."

Entering the living room, Lou's wife Phyllis said, "You'll never get to Mars in the state you're in now, Jack." She turned up the hi-fi; it was a progressive jazz group, vibes and double bass, or perhaps it was an electronic instrument playing. Blonde, pert Phyllis seated herself on the couch near him and studied him. "Jack, are you sore at us? I mean, you're so peculiar and withdrawn."

"It's just one of his moods," Notting said. "When we were in the Service he used to get them, especially on Saturday night. Morose and silent, brooding. What are you brooding about right now, Jack?"

The question seemed odd to him. He was not brooding about anything, his mind was empty. The match folder still filled up his range of perception. Nevertheless, it was necessary that he give them an account of what he was brooding over. They all expected it, so dutifully he made up a topic.

"The air," he said. "On Mars. How long will it take me to adjust? Varies among different people." A yawn, which never came out, had lodged in his chest, diffusing throughout his lungs and windpipe. It left his mouth hanging partly open; with an effort he managed to close his jaws. "Guess I better go on," he said. "Hit the sack." With the use of all his strength he managed to get to his feet.

"At nine o'clock?" Fred Clarke yelled.

Later, as he walked home to his own apartment, along the cool dark streets of Oakland, he felt fine. He wondered what had been wrong back there at Notting's. Maybe bad air or the ventilation.

But something was wrong.

Mars, he thought. He had cut the ties, in particular his job, had sold his Plymouth, given notice to the official who was his landlord. And it had taken him a year to get the apartment; the building was owned by the non-profit West Coast Co-op, an enormous structure partly underground, with thousands of units, its own supermarket, laundrette, child-care center, clinic, even its own psychiatrist down below in the arcade of shops beneath the street level. There was an FM radio station on the top floor which broadcast classical music chosen by the building residents, and in the center of the building could be found a theater and meeting hall. This was the newest of the huge cooperative apartment buildings — and he had given it all up, suddenly. One day he had been in the building's book store, waiting in line to buy a book, and the idea came to him.

After he had given notice he had wandered along the corridors of the co-op arcade, come onto the bulletin board with its tacked-up notices. He halted automatically to read them. Children scampered past him, on their way to the co-op playground behind the building. One notice, large and printed, attracted his attention.

Help spread the co-op move-

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ment to newly colonized areas. Emigration prepared by the Co-op Board in Sacramento in answer to big business and big labor union exploitation of mineral-rich areas of Mars. Sign up now!

It read much like all the co-op notices. And yet — why not? A lot of young people were going. And what was left for him on Earth? He had given up his co-op apartment but he was still a member; he still had his share of stock and his number.

Later on, when he had signed up and was in the process of being given his physical and his shots, the sequence had blurred in his mind. He remembered the decision to go to Mars *as coming first,* and then the giving up of his job and apartment. It seemed more rational that way, and he told that story to his friends. But it simply wasn't true.

What was true? For almost two months he had wandered about, confused and despairing, not certain of anything except that on November 14, his group, two hundred co-op members, would leave for Mars. Then everything would be changed. The confusion would lift and he would see clearly, as he had once at some vague period in the past. He knew that. Once he had been able to establish the order of things in space and time. Now, for reasons unknown to him, both space and time had shifted so that he could not find his bearings in either one.

His life had no purpose. For fourteen months he had lived with one massive goal: to acquire an apartment in the huge new co-op building. Then, when he had gotten it, there was nothing. The future had ceased to exist. He listened to the Bach suites which he requested. He bought food at the supermarket and browsed in the building book store. But what for? He asked himself, Who am I? And at his job, his ability faded away. That was the first indication, and in some ways the most ominous of all; that was what had first frightened him.

It began with a weird incident which he was never able fully to account for. Apparently part had been pure hallucination. But which part?

His job was with an electronics firm in Redwood City, south of San Francisco. He operated a machine which maintained quality-control along the assembly line. It was his responsibility to see that his machine did not deviate from its concept of acceptable tolerances in a single component: a liquid-helium battery no larger than a match head. One day he was summoned to the personnel manager's office unexpectedly. He did not know why they wanted him, and as he took the elevator up he was quite nervous. Later he remembered that.

"Come in, Mr. Bohlen." The personnel manager, a fine-looking man with curly gray hair — perhaps a fashion wig — welcomed him into his office. "This won't take but a moment." He eyed Jack keenly. "Mr Bohlen, why aren't you cashing your paychecks?"

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There was silence.

"Aren't I?" Jack said. His heart body shake. He felt unsteady and tired. I thought I was, he said to himself.

"You could stand a new suit," the personnel manager said, "and you need a haircut. Of course, it's your business."

Putting his hand to his scalp, Jack felt about, puzzled. Did he need a haircut? Hadn't he just had one last week? Or maybe it was longer ago than that. He said, "Thanks. Okay, I will."

And then the hallucination happened. He saw the personnel manager in a new light.

The man was dead.

He saw, through the man's skin, his skeleton. It had been wired together, the bones connected with fine copper strands. The organs, replaced by artificial components. Kidney, heart, lungs — everything was made of plastic and stainless steel, all working in unison but entirely without life. The man's voice issued from a tape, amplifier and speaker system.

Possibly at some time in the past the man had been real and alive, but that was over. The stealthy replacement had taken place, inch by inch, progressing insidiously from one organ to the next, and the entire structure was there to deceive others. To deceive him, Jack Bohlen, in fact. He was alone in this office. There was no personnel manager. No one spoke to him, and when he himself talked, no one heard. It was entirely a lifeless, mechanical room in which he stood.

He was not sure what to do. He tried not to stare too hard at the manlike structure before him. He tried to talk calmly, naturally, about his job and even his personal problems.

The structure was probing; it wanted to learn something from him. Naturally, he told it as little as possible. And all the time, as he gazed down at the carpet, he saw its pipes and valves and working parts functioning away. He could not keep from seeing.

All he wanted to do was get away as soon as possible. He began to sweat. He was dripping and trembling, and his heart pounded louder and louder.

"Bohlen," the structure said, "are you sick?"

"Yes," he said. "Can I go back down to my bench now?" He turned and started toward the door.

"Just a moment," the structure said from behind him.

That was when panic overtook him, and he ran. He grabbed the door open and ran out into the hall.

An hour or so later he found himself in Burlingame. He did not remember the intervening time and he did not know how he had gotten where he was. His legs ached. Evidently he had walked miles.

His head was much clearer. I'm schizophrenic, he said to himself. I know it. Everyone knows the symptoms. It's catatonic excitement with paranoid coloring: the mental health people drill it into us, even as school kids. I'm another one of those. That was what the personnel manager was probing.

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I need medical help.

As he removed the power supply of the Angry Janitor and laid it on the floor, the Master Circuit of the School said, "You are very skillful."

Jack glanced up at the middle-aged female figure and thought to himself, It's obvious why this place unnerves me. It's like my psychotic experience of years ago. *Did I, at that time, look into the future?*

There had been no schools of this kind, then. Or if there had, he had not known of them.

"Thank you," he said.

What had tormented him ever since the psychotic episode with the personnel manager at Corona Corporation was this: suppose it was not a hallucination? Suppose the so-called personnel manager was as he had seen him, an artificial construct, a machine like these Teaching Machines?

If that had been the case, *then there was no psychosis.*

Instead of a psychosis, he had thought again and again, it was more on the order of a vision, a glimpse of absolute reality, with the facade stripped away. And it was so crushing, so radical a view, that it could not be meshed with his ordinary view. And the mental disturbance had come out of that.

Reaching into the exposed wiring of the Angry Janitor, Jack felt expertly with his long fingers until at last he touched what he knew to be there: a broken lead. "I think I've got hold of it," he said to the Master Circuit of the School. Thank God, he thought, these aren't the old-fashioned printed circuits. Were that the case, he would have to replace the unit. Repair would be impossible.

"My understanding," the Master Circuit said, "is that much effort went into the designing of the Teachers re problems of repair. We have been fortunate so far; no prolonged interruption of service has taken place. However, I believe that preventive maintenance is indicated wherever possible. Therefore I would like you to inspect one additional Teacher which has as yet shown no signs of a breakdown. It is uniquely vital to the total functioning of the School." The Master Circuit paused politely as Jack struggled to get the long tip of the soldering gun past the layers of wiring. "It is Kindly Dad which I want you to inspect."

Jack said, "Kindly Dad." And he thought acidly, I wonder if there's an Aunt Mom in here somewhere. Aunt Mom's delicious home-baked tall tales for little tots to imbibe. He felt nauseated.

"You are familiar with that Teacher?"

As a matter of fact he was not. David hadn't mentioned it.

From further down the corridor he could hear the children still discussing life with the Whitlock. Their voices reached him as he lay on his back, holding the soldering gun above his head and reaching into the works of the Angry Janitor to keep the tip in place.

"Yes," the Whitlock said in its never-ruffled, absolutely placid

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voice, "the raccoon is an amazing fellow, ol' Jimmy Raccoon is. Many times I've seen him. And he's quite a large fellow, by the way, with powerful, long arms which are really quite agile."

"I saw a raccoon once," a child piped excitedly. "Mr. Whitlock, I saw one, and he was this close to me!"

Jack thought, You saw a raccoon on Mars?

The Whitlock chuckled. "No, Don, I'm afraid not. There aren't any raccoons around here; you'd have to go all the way across over to old mother Earth to see one of those amazing fellows. But the point I'd like to make is this, boys and girls. You know how ol' Jimmy Raccoon takes his food and carries it oh so stealthily to the water, and washes it? And how we laughed at ol' Jimmy when the lump of sugar dissolved and he had nothing at all left to eat? Well, boys and girls, do you know that we've got Jimmy Raccoons right here in this very — "

"I think I'm finished," Jack said, withdrawing the gun. "Do you want to help me put this back together?"

The Master Circuit said, "Are you in a rush?"

"I don't like that thing talking away in there," Jack said. It made him tense and shaky, so much so that he could hardly do his work.

A door rolled shut, down the corridor from them. The sound of the Whitlock's voice ceased. "Is that better?" the Master Circuit asked.

"Thanks," Jack said. But his hands were still shaking. The Master Circuit noted that. He was aware of her precise scrutiny. He wondered what she made of it.

The chamber in which Kindly Dad sat consisted of one end of a living room with fireplace, couch, coffee table, curtained picture window and an easy chair in which Kindly Dad himself sat, a newspaper open on his lap. Several children sat attentively on the couch as Jack Bohlen and the Master Circuit entered. They were listening to the expostulations of the Teaching Machine and did not seem aware that anyone had come in. The Master Circuit dismissed the children, and then started to leave, too.

"I'm not sure what you want me to do," Jack said.

"Put it through its cycle. It seems to me that it repeats portions of the cycle or stays stuck. In any case, too much time is consumed. It should return to its starting stage in about three hours." A door opened for the Master Circuit and she was gone; he was alone with Kindly Dad, and not glad of it.

"Hi, Kindly Dad," he said without enthusiasm. Setting down his tool case he began unscrewing the back plate of the Teacher.

Kindly Dad said in a warm, sympathetic voice, "What's your name, young fellow?"

"My name," Jack said, as he unfastened the plate and laid it out flat, "is Jack Bohlen and I'm a kindly dad, too, just like you, Kindly Dad. My boy is ten years old, Kindly Dad. So don't call me young fellow, okay?" He again was trembling hard, and sweating.

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"Ohh," Kindly Dad said. "I see!"

"What do you see?" Jack said, an discovered that he was almost shouting. "Look," he said. "Go through your goddam cycle; okay? If it makes it easier for you, go ahead and pretend I'm a little boy." I just want to get this done and get out of here,he said to himself, with as little trouble as possible. He could feel the swelling, complicated emotions inside him. Three hours!

Kindly Dad said, "Little Jackie, it seems to me you've got a mighty heavy weight on your chest, today. Am I right?"

"Today and every day." Jack clicked on his trouble-light and shone it up into the works of the Teacher. The mechanism seemed to be moving along its cycle properly so far.

"Maybe I can help you," Kindly Dad said. "Often it helps if an older, more experienced person can sort of listen in on your troubles, sort of shares them and makes them lighter."

"Okay," Jack agreed, sitting back on his haunches. "I'll play along. I've got three hours I'm stuck here anyhow. You want me to go all the way back to the beginning? To the episode back on Earth when I worked for Corona Corporation and had the occlusion?"

"Start wherever you like," Kindly Dad said graciously.

"Do you know what schizophrenia is, Kindly Dad?"

"I believe I've got a pretty good idea, Jackie," Kindly Dad said.

"Well, Kindly Dad, it's the most mysterious malady in all medicine, that's what it is. And it shows up in one out of every six people, which is a lot of people."

"Yes, that certainly is," Kindly Dad said.

"At one time," Jack said, as he watched the machinery moving, "I had it. What they call 'situational polymorphous schizophrenia simplex.' And, Kindly Dad, it was rough."

"I just bet it was," Kindly Dad said.

"Now, I know what you're supposed to be for," Jack said, "I know your purpose, Kindly Dad. We're a long way from Home. Millions of miles away. Our connection with our civilization back Home is tenuous. And a lot of folks are mighty scared, Kindly Dad, because with each passing year that link gets weaker. So this Public School was set up to present a fixed milieu to the children born here, an Earth-like environment. For instance, this fireplace. We don't have fireplaces here on Mars; we heat by small atomic furnaces. That picture window with all that glass — sandstorms would make it opaque. In fact there's not one thing about you that's derived from our actual world, here. Do you know what a Bleekman is, Kindly Dad?"

"Can't say that I do, Little Jackie. What is a Bleekman?"

"It's one of the indigenous races of Mars. You do know you're on Mars, don't you?"

Kindly Dad nodded.

"Schiozophrenia," Jack said, "is one of the most pressing problems

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human civilization has ever faced. Frankly, Kindly Dad, I emigrated to Mars because of my schizophrenic episode back when I was twenty-two. I worked for Corona Corporation. I was cracking up. I had to move out of a complex urban environment and into a simpler one a primitive frontier environment with more freedom. The pressure was too great for me; it was emigrate or go mad. That co-op building. Can you imagine a thing going down level after level and up like a skyscraper, with enough people living there to have their own supermarket? I went mad standing in line at the book store. Everybody else, Kindly Dad, every single person in that book store and in that supermarket — all of them lived in the same building as I did. It was a society, Kindly Dad, that one building. And today it's small by comparison with some that have been built? What do you say to that?"

"My, my," Kindly Dad said, shaking his head.

"Now, here's what I think," Jack said. "I think this Public School and you Teaching Machines are going to rear another generation of schizophrenics. The descendants of people like me who are making a fine adaptation to this new planet. You're going to split the psyches of these children because you're teaching them to expect an environment which doesn't exist for them. It doesn't even exist back on Earth now. It's obsolete. Ask that Whitlock Teacher if intelligence doesn't have to be practical to be true intelligence. I heard it say so. It has to be a tool for adaptation. Right, Kindly Dad?"

"Yes, Little Jackie, it has to be."

"What you ought to be teaching," Jack said, "is how do we—"

"Yes, Little Jackie," Kindly Dad interrupted, "it has to be." And as it said this, a gear-tooth slipped in the glare of Jack's trouble light, and a phase of the cycle repeated itself.

"You're stuck," Jack said. "Kindly Dad, you've got a worn gear-tooth."

"Yes, Little Jackie," Kindly Dad said, "it has to be."

"You're right," Jack said. "It does have to be. Everything wears out eventually; nothing is permanent. Change is the one constant of life. Right, Kindly Dad?"

"Yes, Little Jackie," Kindly Dad said, "it has to be."

Shutting off the Teaching Machine at its power supply, Jack began to disassemble its main-shaft, to remove the worn gear.

"So you found it," the Master Circuit said, when Jack emerged a half hour later, wiping his face with his sleeve.

"Yes," he said. He was exhausted. His wristwatch told him that it was only four o'clock. An hour more of work lay ahead of him.

The Master Circuit accompanied him to the parking lot. "I am quite pleased with the promptness with which you attended to our needs," she said. "I will telephone Mr. Yee and thank him."

He nodded and climbed into his 'copter, too worn out even to say good-by. Soon he was ascending; the duck egg which was the UN-

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operated Public School became small had far away below him. Its stifling presence vanished, and he could breathe again.

Flipping on his transmitter he said, "Mr. Yee. This is Jack; I'm done at the School. What next?"

After a pause Mr. Yee's pragmatic voice answered. "Jack, Mr. Arnie Kott at Lewistown called us. He requested that we service an encoding dictation machine in which he places great trust. Since all others of our crew are tied up, I am sending you."

X.

Arnie Kott owned the only harpsichord on Mars. However, it was out of tune, and he could find no one to service it. No matter which way you cut it, there were no harpsichord tuners on Mars.

For a month now he had been training his tame Bleekman to tackle this task. Bleekmen had a fine ear for music, and his particular one seemed to understand what Arnie wanted. Heliogabalus had been provided with a translation into the Bleeky dialect of a manual on keyboard instrument maintenance, and Arnie expected results any day, now. But meanwhile the harpsichord was virtually unplayable.

Back in Lewistown from his visit to Anne Esterhazy, Arnie Kott felt glum. The death of the black market goodies man, Norbert Steiner, was a solid blow below the belt. Arnie knew that he would have to make a move, probably a drastic and unprecedented one, to compensate for it. It was now three o'clock in the afternoon. What had he gotten out of his trip to New Israel? Only a piece of bad news. Anne, as usual, could not be talked into anything. She intended to go right on with her amateurish campaigns and causes, and if she were the laughing stock of Mars it did not matter to her.

"Goddam you, Heliogabalus," Arnie said with fury, "you get that goddam instrument playing right or I'm kicking you out of Lewistown. You can go back to eating beetles and roots in the desert, with the rest of your kind."

Seated on the floor beside the harpsichord, the Bleekman winced, glanced up acutely at Arnie Kott, then lowered his eyes to the manual once more.

"Nothing ever gets fixed around here," Arnie grumbled.

All Mars, he decided, was a sort of humpty dumpty. The original state had been one of perfection, and they and their property had all fallen from that into rusty bits and useless debris. He felt sometimes as if he presided over an enormous junkyard. And then, once more, he thought about the Yee Company repair 'copter which he had run into on the desert, and the zwepp piloting it. Independent bastards, Arnie said to himself. Ought to be taken down a peg or two. But they knew their worth. Vital to the economy of the planet; it was written on their faces. We bow to no man, etc. Arnie paced about the big front room of the Lewistown house which he

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maintained in addition to his apartment at Union Hall, hands in his pockets, scowling.

Imagine! That guy talked back to me just like that, Arnie reflected. He must be a hell of a good repairman.

And Arnie also thought, I'm going to get that guy if it's the last thing I do.

But of the two thoughts about the Yee Company uppity repairman, the former slowly began to dominate his mind, because he was a practical man and he knew that things had to be kept running. Codes of conduct had to come second. We're not running a medieval society here, Arnie said to himself. If the guy's really good he can say what he wants to me; all I care about is results.

With that in mind, he telephoned the Yee Company at Bunchewood Park, and soon had Mr. Yee himself on the line.

"Listen," Arnie said, "I got a sick encoder over here. If you fellows can get it working maybe I can use you on a permanent contract basis; you follow me?"

There was no doubt of it. Mr. Yee followed him, all right. He saw the entire picture. "Our best man, sir. Right away. And I know we'll give absolute satisfaction, any hour of the day or night."

"I want one particular man," Arnie said, and he thereupon described the repairman he had met on the desert.

"Young, dark-haired, slender," Mr. Yee repeated. "Glasses, and with a nervous manner. That would be Mr. Jack Bohlen. Our finest."

"Let me tell you," Arnie said, "that this Bohlen guy talked to me in a way I don't let nobody talk to me. But after I thought it over I realized he was in the right, and when I see him I'm going to tell him that to his face." However, in actuality Arnie Kott no longer could recall what the issue had been. "That guy Bohlen seems to have a good head on him," he wound up. "Can he get over here today?"

Without hesitation Mr. Yee promised service by five o'clock.

"I appreciate that," Arnie said. "And be sure and tell him that Arnie holds no grudges. Sure, I was taken aback at the time. But that's all over. Tell him —" He pondered. "Tell Bohlen he's got absolutely nothing to worry about regarding me." He rang off, then, and sat back with a feeling of grim, honest accomplishment.

So the day after all wasn't a total waste. And, too, he had gotten an interesting bit of information from Anne, while over at New Israel. He had brought up the topic of rumored goings-on in the F.D.R. Mountains, and as usual Anne knew a few inside yarns emanating from Home, accounts no doubt garbled in the chain of oral tellings . . . and yet the nugget of veracity was there.

The UN back Home was in the process of staging one of its periodic coups. It was going to descend on the F.D.R. Mountains in another couple of weeks and lay claim to them as public domain land belonging to no one — which was palpably true. But why was it the UN wanted

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a big hunk of worthless real estate? There Anne's tale got perplexing. One story noised about back at Geneva was that the UN intended to build an enormous supernational park, a sort of Garden of Eden, to lure emigrants out of Earth. Another had it that the UN engineers were going to make a vast final attack on the problem of beefing up the power sources on Mars. They were going to set up a huge hydrogen atomic-energy power plant, unique in both size and scope. The water system would be revitalized. And, with adequate sources of power, heavy industry could at last move over to Mars, taking advantage of free land, light gravity, low taxation.

And then another rumor had it that the UN was going to set up a military base in the F.D.R. Mountains to offset United States and Soviet plans along the same general line.

Whichever rumor was true, one fact stuck out. Certain parcels of land in the F.D.R. Range were going to be acutely valuable, pretty soon.

The entire range was up for sale right now, in pieces varying from half an acre to a hundred thousand acres, and at a staggeringly low price. Once speculators got wind of the UN's plans, this would change. In fact, no doubt speculators were already beginning to act. To claim land on Mars. they had to be on the spot. It could not be done from Home — that was the law. So one could expect speculators to come over any time, now, if Anne's rumor were correct. It would be like the first year of colonization, when speculators were active everywhere.

Seating himself at his out-of-tune harpischord, Arnie opened a book of Scarlatti sonatas and began to bang away at one of his favorites, a cross-hand one on which he had been practicing for months, now. It was strong, rhythmic, vigorous music, and he pounded the keys with delight, ignoring the distorted sound itself. Heliogabalus moved further off to study his manual; the sound hurt his ears.

"I've got a long-playing record of this," he said to Heliogabalus as he played. "So goddam old and valuable that I don't dare play it."

"What is a 'long-playing record'?" the Bleekman asked.

"You wouldn't understand if I told you. Glenn Gould playing. It's forty years old. My family passed it down to me, it was my mother's. That guy could really hammer these cross-hand sonatas out." His own playing discouraged him, and he gave up. I could never be any good, he decided, even if this instrument were in peak condition like it was before I had it shipped here from Home.

Seated on the bench but not playing, Arnie ruminated once more on the golden opportunities involved in F.D.R. Mountains land. I could buy in any time, he thought, with Union funds. But *where?* It's a big range. I can't buy it all.

Who knows that range? he asked himself. That Steiner probably did, because as I understand it his base of operations is — or rather was —

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around there some place. And there are prospectors coming and going. And Bleekmen live there, too.

"Helio," he said, "do you know the F.D.R. Range?"

"Mister, I do know them," the Bleekman said. "I shun them. They are cold and empty and have no life."

"Is it true," Arnie said, "that you Bleekman have an oracular rock that you go to when you want to know the future?"

"Yes, Mister. The uncivilized Bleekmen have that. But it is vain superstition. Dirty Knobby, the rock is called."

"You never consult it, yourself."

"No, Mister."

"Could you find that rock, if necessary?"

"Yes, Mister."

"I'll give you a dollar," Arnie said "if you take a question to your goddam Dirty Knobby Rock for me."

"Thank you, Mister, but I cannot do it."

"Why not, Helio?"

"It would proclaim my ignorance, to consult with such fraudulency."

"Christ," Arnie said, disgusted. "Just as a game. Can't you do that? For a joke."

The Bleekman said nothing, but his dark face was tight with resentment. He pretended to resume his reading of the manual.

"You fellows were stupid to give up your native religion," Arnie said. "You showed how weak you are. I wouldn't have. Tell me how to find Dirty Knobby and I'll ask it myself. I know goddam well that your religion teaches that you can foretell the future, and what's so peculiar about that? We've got extra-sensory individuals back Home. Some of them have precognition, can read the future. Of course, we have to lock them up with the other nuts, because that's a symptom of schizophrenia, if you happen to know what that means."

"Yes, Mister," Heliogabalus said. "I know schizophrenia. It is the savage within the man."

"Sure, it's the reversion to primitive ways of thought, but so what if you can read the future? In those mental health camps back Home there must be hundreds of precogs —" And then a thought struck Arnie Kott. Maybe there're a couple here on Mars, at Camp B-G.

The hell with Dirty Knobby Rock, then, Arnie thought. I'll drop by B-G one day before they close it and get me a precog nut. I'll bail him out of the camp and put him on the payroll, right here in Lewistown.

Going to his telephone he called the Union Steward, Edward L. Goggins. "Eddy," he said, when he had hold of the Steward, "you trot over to our psychiatric clinic and collar those doctors, and you bring back a description of what a precog nut is like, I mean, what symptoms, and if they know one at Camp B-G we could nab."

"Okay, Arnie. Will do."

"Who's the best psychiatrist on Mars, Eddy?"

"Gosh, Arnie, I'd have to check into it. The Truckers have a good one, Milton Glaub. Reason I know

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that is my wife's brother is a Trucker and got analysis from Glaub last year, plus naturally effective representation."

"I suppose this Glaub knows B-G pretty good."

"Oh, yeah, Arnie. He's over there once a week. They all take turns. The Jews pay pretty good, they get the dough from Israel back on Earth, you know."

"Well, get hold of this Glaub and tell him to rustle up a precog schizophrenic for me as soon as possible. Put Glaub on the payroll but only if you have to. Most of these psychiatrists are aching for regular money, they see so little of it. Understand, Eddy?"

"Right, Arnie." The Steward rang off.

"You ever been psychoanalyzed, Helio?" Arnie said to him, feeling cheerful, now.

"No, Mister. Entire psychoanalysis is a vainglorious foolishness."

"How zat, Helio?"

"Question they never deal with is, What to remold sick person like. There is no what, Mister."

"I don't get you, Helio."

"Purpose of life is unknown, and hence way to be is hidden from the eyes of living critters. Who can say if perhaps the schizophrenics are not correct? Mister, they take a brave journey. They turn away from mere things, which one may handle and turn to practical use. They turn inward to *meaning*. There, the black-night-without-bottom lies, the pit. Who can say if they will return? And if so, what will they be like, meaning? I admire seeing them."

"Keerist," Arnie said, with derision, "you half-educated freak — I'll bet if human civilization disappeared from Mars you'd be right back there among those savages in ten seconds flat, worshipping idols and all that. Why do you pretend you want to be like us? Why are you reading that manual?"

Heliogabalus said, "Human civilization will never leave Mars, Mister. That is why I study this book."

"Out of that book," Arnie said, "you better be able to tune up my goddam harpsichord, or you will be back in the desert, whether human civilization stays on Mars or not."

"Yes sir," his tame Bleekman said.

Ever since he had lost his union card and could not legally perform his job, Otto Zitte's life had been a continual mess. With a card he would be by now a first class repairman.

It was his secret that he had once held such a card and had managed to lose it. Even his employer, Norb Steiner, did not know it. For reasons he himself did not understand, Otto preferred others to believe he had simply failed the aptitude tests.

Perhaps it was easier to think of himself as a failure. After all, the repair business was almost impossible to get into . . . and after having gotten into it, to be booted out —

It was his own fault. There he had been, three years ago, a paid-up member of the union in good standing, in other words a bona fide Goodmember. The future was wide open for him. He was young, he had a girl friend and his own 'copter

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—the latter leased; the former, although he had not known it at the time, shared — and what could hold him back? What possibly, except his own stupidity.

He had broken a union ruling which was a basic law. In his opinion it was a foolish ruling, but nonetheless . . . vengeance is mine, sayeth the Extraterrestrial Repairman's Union, Martian Branch. Wow, how he hated the skunks! His hatred had warped his life. He recognized that — and did nothing about it; he wanted it to warp him. He wanted to keep on hating the vast monolithic structure wherever it existed.

They had caught him for giving socialized repair.

And the hell of it was that it wasn't actually socialized because he expected to get back a profit. It was just a new way of charging his customers, and in a sense not so new anyhow. It was actually the oldest way in the world, a barter system. But his revenue could not be divvied with the union.

His trade had been with certain housewives living out in remote tracts, very lonely women whose husbands stayed in the city five days a week, came home only on weekends. Otto, who was good-looking, slender, with long combed-back black hair (in his account of himself, anyhow), had made time with one woman after another. And an outraged husband, in finding out, had instead of shooting Otto to death, gone instead to the Union Hiring Hall and lodged a formal charge: repairs without compensation at scale.

Well, it certainly was not scale; he admitted that.

And so now this job with Norb Steiner, which meant that he had to practically live in the wastelands of the F.D.R. Mountains, alienated from society for weeks on end, growing more and more lonely, more embittered all the time. It had been his need for intimate personal contact that had gotten him into trouble in the first place, and now look at him.

As he sat in the storage shed waiting for the next rocket to show up, he looked back on his life and reflected that even the Bleekmen wouldn't be willing or able to live as he lived, cut off from everyone like this. If only his own black market operations had succeeded! He had, like Norb Steiner, been able to swing around the planet daily, visiting one person after another. Was it his fault that the items he chose to import were hot enough to interest the big boys? His judgment had been too good. His line had sold too well.

He hated the big racketeers, too, same as he hated the big unions. He hated bigness per se. Bigness had destroyed the American system of free enterprise, the small businessman had been ruined — in fact, he himself had been perhaps the last authentic small businessman in the solar system. That was his real crime. He had tried to live the American way of life, instead of just talking about it.

"Hell with them," he said to himself, seated on a crate, surrounded by boxes and cartons and packages

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and the workings of several dismantled rocket ships which he had been revamping. Outside the shed window ... silent, desolate rock hills, with only a few shrubs, dried up and dying, as far as the eye could see.

And where was Norb Steiner right now? No doubt ensconced in some bar or restaurant or some woman's cheery living room prattling his line, handing over tins of smoked salmon and getting in return —

"Hell with them all," Otto mumbled, getting up to pace back and forth. "If that's what they want, let 'em have it. Bunch of animals."

Those Israeli girls ... that's where Steiner was, with a kibbutzful of them, those hot, black-eyed, heavy-lipped sexy ones who got tanned working out in the fields in shorts and cotton shirts clinging to them.

That's why he wouldn't let me go with him, Otto decided.

The only women he ever saw out here in the F.D.R. Range were those stunted, black, dried-out Bleekman women, not even human, at least not to him. He wasn't taken in by those anthropologists saying that the Bleekmen were from the same stock as homo sapiens, probably both planets colonized a million years ago from one interplanetary race. Those toads human? The thought made him sick.

As a matter of fact, here came a party of Bleekmen right now, stepping gingerly with bare feet down the irregular rock surface of a northern hill, on their way here.

He opened the door of the shed, waiting until they had reached him. Four bucks, two of them elderly, one elderly woman, several skinny kids, carrying their bows, their pounding blocks, their paka eggshells.

Halting, they regarded him silently, and then one of the bucks said, "Rains are falling from me onto your valuable person."

"Likewise," Otto said, leaning against the shed, weighed down with hopelessness. "What do you want?"

The Bleekman buck held out a small bit of paper. Otto saw that it was a label from a can of turtle soup. The Bleekmen had eaten the soup, retaining the label for this purpose. They could not tell him what they wanted because they did not know what it was called.

"Okay," he said. "How many?" He held up fingers. At five they nodded. Five cans. "Whatch got?" Otto demanded, not stirring.

One of the young Bleekman women stepped forward and pointed to herself.

"Oh, hell," Otto said in despair. "No, go on. Beat it. Not any more. I don't want any more." He turned his back on them, made his way into the storage shed and slammed the door so hard that the shed trembled. He threw himself down on a packing crate, his head in his hands. "I'm going crazy," he said to himself, his jaw stiff, his tongue swelling up so that he could hardly talk. His chest ached. And then, to his amazement, he began to cry. He thought in fright, I really am going crazy; I'm breaking down. Why?

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Tears rolled down his cheeks. He hadn't cried in years. What's this all about? he wondered. His mind had no concept in it; it was only his body bawling away, and he was a spectator to it.

But it brought him relief. With his handkerchief he wiped his eyes, his face, cursed, and saw that his hands were claw-like with rigidity, the fingers writhing.

Outside the window of the shed the Bleekmen remained, perhaps seeing him; he could not tell. Their faces showed no expression, but he felt sure they must have seen, and probably were as perplexed as he. It sure is a mystery, he thought. I agree with you.

The Bleekmen gathered together in a huddle and conferred, and then one of them detached himself from the group and approached the shed. Otto heard a rap on the door. Going over and opening it he found the young Bleekman standing there holding out something.

"This, then," the young Bleekman said.

Otto took it, but for the life of him he could not make out what it was. It had glass and metal to it, and calibrations. And then he realized that it was an instrument used in surveying. On its side was stamped: UN PROPERTY.

"I don't want it," he said irritably, turning it over and over. The Bleekmen must have stolen it, he realized. He handed it back. The young buck accepted it stoically and returned to his group. Otto shut the door.

This time they went off; he watched them through the window as they trailed away up the side of the hill. Steal you blind, he said to himself. Anyhow, what was a UN survey company doing in the F.D.R. Range?

To cheer himself up he rummaged around until he found a can of smoked frogs' legs. Opening it, he sat eating morosely, not getting from the dainty anything at all and yet methodically finishing the can.

XI

Into the microphone Jack Bohlen said, "Don't send me, Mr. Yee. I already ran into Kott today and offended him." Weariness settled over him. Naturally I ran into Kott, for the first time in my life, and naturally I insulted him, he thought to himself. And just as naturally, because that's how my life works, it's the same day that Arnie Kott decides to call up Yee Company and ask for service. It's typical of the little game I play with the powerful sources of life.

"Mr. Kott mentioned meeting you on the desert," Mr. Yee said. "In fact, his decision to call us was based on that meeting."

"The hell you say." He was dumbfounded.

"I do not know what the issue was, Jack, but no harm has been done. Direct your ship to Lewistown. And if you run over beyond five o'clock you will be paid time-and-a-half. And Mr. Kott, who is known as a generous man, is so anxious to have his encoder working that he promises to see that

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you receive a bountiful meal."

"All right," Jack said. It was too much for him to dope out. After all, he knew nothing of what went on in Arnie Kott's mind.

Not long thereafter he was lowering his 'copter to the roof parking lot of the Water Workers' Union Hall at Lewistown.

A slavey sauntered out and regarded him suspiciously.

"Yee Company repairman," Jack said. "Call put in by Arnie Kott."

"Okay, buddy," the slavey said, and led him to the elevator.

He found Arnie Kott in a well-furnished Earth-type living room; the big bald-headed man was on the telephone, and he nodded his head at Jack's appearance. The nod indicated the desk, on which a portable encoding dictation machine sat. Jack walked over to it, removed the lid, turned it on. Meanwhile, Arnie Kott continued his phone conversation.

"Sure I know it's a tricky talent. Sure, there's a good reason why nobody's been able to make use of it. But what am I supposed to do, give up and pretend it don't exist just because people have been too damn dumb for fifty thousand years to take it seriously? I still want to try it." A long pause. "Okay, Doctor. Thanks." Arnie hung up. To Jack he said, "You ever been to Camp B-G?"

"No," Jack said. He was busy opening up the encoder.

Arnie strolled over beside him and stood. As he worked, Jack could feel the astute gaze fixed on him. It made him nervous, but there was nothing he could do except try to ignore the man and go on. A little like the Master Circuit, he thought to himself. And then he wondered, as he often did, if he was going to have another one of his spells. True, it had been a long time, but here was a powerful figure looming close to him, scrutinizing him, and it did somewhat resemble that old interview with Corona's personnel manager.

"That was Glaub on the phone," Arnie Kott said. "The psychiatrist. You ever heard of him?"

"No," Jack said.

"What do you do, live your life entirely with your head stuck in the back of machines?"

Jack looked up, met the man's gaze. "I've got a wife and son. That's my life. What I'm doing right now is a means of keeping my family going." He spoke calmly. Arnie did not seem to take offense; he even smiled.

"Something to drink?" Arnie asked.

"Coffee, if you have it."

"I've got authentic Home coffee," Arnie said. "Black?"

"Black."

"Yeah, you look like a black coffee man. You think you can fix that machine right here and now, or take it with you?"

"I can fix it here."

Arnie beamed. "That's swell! I really depend on that."

"Where's the coffee?"

Turning, Arnie went off dutifully. He rustled about off in another room and then returned

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with a ceramic coffee mug, which he set down on the desk near Jack. "Listen, Bohlen. I have a person coming here any minute now. A girl. It won't interfere with your work, will it?"

Jack glanced up, supposing the man was being sarcastic. But evidently no. Arnie was eying him and then the partly-disassembled machine, obviously concerned with how the repair was progressing. He certainly is dependent on this, Jack decided. Strange, how people cling to their possessions, as if they're extensions of their bodies, a sort of hypochondria of the machine. You'd think a man like Arnie Kott could buy a new one.

There sounded a knock on the door, and Arnie hurried to open it. "Oh, hi," his voice came to Jack. "Come on in. Hey, I'm getting something fixed."

A girl's voice said, "Arnie, you'll never get it fixed."

Arnie laughed nervously. "Hey, meet my new repairman, Jack Bohlen, Bohlen, this is Doreen Anderton, our Union Treasurer."

"Hi," Jack said. Out of the corner of his eye — he did not stop working — he could see that she had red hair and extremely white skin and large, wonderful eyes. Everybody's on the payroll, he thought tartly. What a great world. What a great union you've got going here, for yourself, Arnie.

"Busy, isn't he?" the girl said.

"Oh yeah," Arnie agreed, "these repair guys are bugs on getting the job done right. I mean these outside guys, not our own — ours are a bunch of slobs that sit around at our expense. I'm through with them, Dor. I mean, this guy Bohlen is a whizz; he's going to have the encoder working any minute now, aren't you, Jack?"

"Yeah," Jack said.

The girl said, "Don't you say hello, Jack?"

Halting his work he turned his attention on her; he faced her levelly. Her expression was cool and intelligent, with a faintly mocking quality which was peculiarly rewarding and annoying. "Hello," Jack said.

"I saw your 'copter on the roof," the girl said.

"Let him work," Arnie said peevishly. "Gimme your coat." He stood behind her, helping her out of her coat. The girl wore a dark wool suit, obviously an import from Earth and therefore expensive to an appalling degree. I'll bet that set the Union pension fund back plenty, Jack decided.

Observing the girl he saw in her a vindication of a piece of old wisdom. Nice eyes, hair and skin produced a pretty woman, but a truly excellent nose created a beautiful woman. This girl had such a nose: strong, straight, dominating her features, a basis for her other features. Mediterranean women could reach the level of beauty much more easily than say Irish or English women, he realized, because genetically speaking the Mediterranean nose, whether Spanish or Israel, or Turkish or Italian, played a naturally greater part in physiognomic organization.

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Arnie said to him, "We're going out and have a drink. If you get that machine fixed in time —"

"It's fixed now." He had found the broken belt and had replaced it with one from his tool kit.

"Good deal," Arnie said, grinning like a happy child. "Then come on along with us." To the girl he explained, "We're meeting Milton Glaub, the famous psychiatrist; you probably heard of him. He promised to have a drink with me, I was talking to him on the phone just now and he sounds like a top-notch sort of guy."

I wonder if I should go along, Jack thought. But why not. He said, "Okay, Arnie."

Arnie said, "Doc Glaub is going to scare up a schizophrenic for me. I need one. I need its professional services." He laughed.

"Do you?" Jack said. "I'm a schizophrenic."

Arnie stopped laughing. "No kidding. I never would have guessed. What I mean is, you look all right."

Finishing up the task of putting the encoder back together, Jack said, "I am all right. I'm cured."

Doreen said, "No one is ever 'cured' of schizophrenia." Her tone was dispassionate; she was simply stating a fact.

"They can be," Jack said, "if it's what is called situational schizophrenia."

Arnie eyed him with great interest, even suspicion. "You're pulling my leg. You're just trying to worm your way into my confidence."

Jack shrugged, feeling himself flush. He turned his attention completely to his work, then.

"No offense," Arnie said. "You really are, no kidding? Listen, Jack, let me ask you; do you have any sort of ability or power to read the future,"

After a long pause, Jack said, "No."

"You sure?" Arnie said, with suspicion.

"I'm sure." He wished now that he had turned the invitation to accompany them down flat. The intent questioning made him feel exposed; Arnie was nudging too close, encroaching on him. It was difficult to breathe, and Jack moved around to the far side of the desk, to put more distance between himself and the plumber.

"Whatzamatter?" Arnie asked acutely.

"Nothing." Jack continued working, not looking at either Arnie or the girl. Both of them were watching him, and his hands shook.

Presently Arnie said, "Jack, let me tell you how I got where I am. One talent got me up here. I can judge people and tell what they're like down inside, what they really are, not just what they do and say. I don't believe you. I bet you're lying to me about your precognition. Isn't that right? You don't even have to answer." Turning to the girl, Arnie said, "Let's get balling; I want that drink." He beckoned to Jack to follow.

Laying down his tools, Jack reluctantly did so.

TO BE CONTINUED

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A HITCH IN SPACE

BY FRITZ LEIBER

ILLUSTRATED BY GRAY

My Space-partner was a good reliable sidekick—but *his* partner was something else!

Once when I was doing a hitch with the Shaulan Space Guard out Scorpio way, my partner Jeff Bogart developed just about the most harmless psychosis you could imagine: he got himself an imaginary companion.

And the imaginary companion turned out to be me.

Well, I'm a pretty nice guy and so having two of me in the ship didn't seem a particularly bad idea. At first. In fact there'd be advantages of it, I thought. For instance, Jeff liked to talk a weary lot ... and the imaginary Joe Hansen could spell me listening to him, while I projected a book or just harkened to the wheels going around in my own head against the faint patter of starlight on the hull.

I met Jeff first at a space-rodeo, oddly enough, but now the two of us were out on a servicing check of the orbital beacons and relays and rescue depots of the five planets of the Shaulan system. A completely routine job, its only drawback that it was lengthy. Our ship was an ionic jeep that looked like a fancy fountain pen, but was very roomy for three men — one of them imaginary.

I caught on to Jeff's little mania by overhearing him talking to me. I'd be coming back from the head or stores or linear accelerator or my bunk, and I'd hear him yakking

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at me. It embarrassed me the first time, how to go back into the cabin when the other me was there. But I just swam in, and without any transition-strain at all that I could observe Jeff looked around at me, smiling sort of glaze-eyed, and said warmly, "Joe. My buddy Joe. Am I glad they paired us."

If Jeff had a major fault, as opposed to a species of nuttiness, it was that he was strictly a speak-only-good, positive-thinking guy who always deferred to me. Even idolized me, if you can imagine that. He'd give me such fulsome praise I'd be irked ten times an orbit.

Another thing that helped me catch on was that he always called the other me Joseph.

At first I thought the whole thing might be a gag, or maybe a deliberate way of letting off steam against me without violating his always-a-sweet-guy code — like happy husbands cursing in the bathroom — but then came the scrambled eggs.

I'd slept late and when I squinted into the cabin there was Jeff hovering over a plate of yellow fluff and shaking his finger at my empty seat and saying, "Dammit, Joseph, eat your scrambled eggs, I cooked 'em 'specially for you," and when he crawfished out toward the galley a couple seconds later he was saying, "Now you start on those eggs, Joseph, before I get back."

I thought for a bit and then I slid into my place and polished them off.

When he floated in with the coffee he gave me another of those glaze-eyed God-fearing looks — but just a mite disappointed, I thought — and said, "Dammit, Joe, you're perfect! You always clean your plate."

Apparently when I was there, Joseph just didn't exist for Jeff. And vice versa. It was sort of eerie. especially with the hum of space in my ears like a seashell and nobody else for five million miles.

Beginning with the scrambled eggs, I discovered that Jeff didn't exactly idolize Joseph — or even take with him the attitude of "My buddy can do no wrong," like he did with me. I overheard him criticizing Joseph. Reasonably at first; then I heard him chewing him out —next bullying him.

It made me wistful, that last, thinking how good it would feel to be full-bloodedly cursed to my face once in a while instead of all the sweetness and light. And right there I got the idea for some amateur therapy, Shaula-Deva help me.

I waited for a moment when we were both relaxed and then I said, "Jeff, the trouble with you is you're too nice. You ought to criticize things more. For a starter, criticize me. Tell me my faults. Go ahead."

He flushed a little and said, "Dammit, Joe, how can I? You're perfect!"

"No man is perfect, Jeff," I told him solemnly, feeling pretty foolish.

"But you're my buddy I always can trust," he protested, squirming a bit. "I wish you wouldn't talk this way."

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"Jeff, you can't trust anybody too far," I said. "Even good guys can do bad things. When I was a boy there was a kid named Harry I practically worshipped. We lived on a pioneer world of Fomalhaut that had good snow, and we'd hitch rides with our sleds off little airscrew planes taking off. We'd each have a long white line on his sled and loop it beforehand around the plane's tail-gear and back to the sled. Then we'd hide. As soon as the pilot got aboard we'd jump on our sleds and each grab the free end of his line and have one comet of a ride, until the plane took off. Then we'd quick let go.

"Well, one frosty morning I let go and nothing happened, except I started to rise. Harry had tied the free end of my line tight to my sled.

"I could have just rolled off, I suppose, but I didn't want to lose my sled or my line either. Luckily I had a sheath knife handy and I used it. I even made a whizeroo of a landing. But ever afterwards my feelings toward Harry—"

"Stop it, please, Joe!" Jeff interrupted, very red in the face and shaking a little. "That boy Harry was utterly evil. And I don't want to hear any more about this, or anything like it, ever again. Understand?"

I told him sure I did. Heck, I could see I'd gone the wrong way about it. I even begged his pardon.

After that I just sweated it out. But I found I couldn't spend much time on books or my thoughts, I'd keep listening for what Jeff was saying to Joseph. And sometimes when he'd pause for Joseph's reply I'd catch myself waiting for the imaginary me to make one. So I took to staying in the same cabin as Jeff as much as I could.

That seemed to make him uncomfortable after a while, though he pretended to glory in it. He'd ask me questions like, "Tell me about life, Joe. So I'll know how to handle myself if we're ever parted."

But the weariest things come to an end, even duty orbits around Shaula. And so the time came when we were servicing our last beacon — outside the planet Shaula-by, it was. Next step would be a fast interplanetary orbit for Base at Shaula-near.

I was out working — on a safety line of course, but suit-jetting around more than I needed to, just for the pure joy of it, so that my suit tank was almost dry. I'd switched my suit radio off for a bit, because, working in space, Jeff had taken to just gabbling to me nervously all the time — maybe because he figured there couldn't be room for Joseph with him in his suit.

I finished up and paused for a last look at the ship. She was sweetly slim from her conical living quarters to the taper-tail of her ionic jet, but she had more junk on her than an amateur asteroid prospector hangs on his suit the first time out. Every duty orbit, fifty scientists come with permission from the Commandant to hang some automatic research gadget on the hull. The craziest one this time was a huge flattened band of gold-

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plated aluminum, little more than foil-thick, attached crosswise just in front of the tail and sticking out twenty feet on each side. I don't know what it was there for — maybe to measure the effects of space on a Moebius strip — but it looked like a wedding ring that had been stepped on. So Jeff and I called it Trompled Love.

But in spite of the junk, the ship looked mighty sweet against the saffron steppes and baby-blue seas of Shaula-by with Shaula herself, old Lambda Scorpii, flaming warm and wildly beyond, and with "United States" standing out big as life on the ship's living quarters. United States of Shaula, of course.

I was almost dreaming out there, thinking how it hadn't been such a terrible duty after all, when I saw the ship begin to slide past Shaula.

Poking out of her tail, ghostlier than the flame over a cafe royale, was the evil blue glow of her jet. In an instant I'd guessed exactly what had happened and was beating myself on the head for not having anticipated it. Joseph had swum into the cabin right after Jeff. And Jeff had yelled at him, "It's about time, you lazy lunkhead! Everything secure? Okay, I'm switching on the beam!" And I'd probably brought the whole thing about by telling him that damfool sled story — and then sticking to him so close he just had to get rid of me, so as to be with Joseph.

Meanwhile the ship was gathering speed in her sneaky way and the wavy safety line between me and the airlock was starting to straighten.

As you know, an ionic jet's only good space-to-space. It's not for heavy-G work; ours could deliver only one-half G at max and was doing less than one-quarter now. Which meant the ship was starting off slower than most ground cars.

But the beam would fire for hours, building up to a terminal velocity of fifteen miles a second and carrying the ship far, far away from lonely Joe Hansen.

Except that we were tied together, of course.

I was very grateful then for the weeks I'd practiced space-roping, though I'd never won any prizes with it, because without thinking I started to whip my line very carefully. And on the third try, just as it was getting pretty straight, I managed to settle it in a notch in one outside end of Trompled Love. After that I took up strain on the line as gradually as I could, letting it friction through my gloves for as long as I could before putting all my mass on it — because although one-quarter G isn't much, it piles up in a few seconds to quite a jerk. I spread that jerk into several little ones.

Well, the last jerk came and the line didn't part and Trompled Love didn't crumple much, though the Shaula-light showed me several very nasty-looking wrinkles in it. And there I was trailing along after the ship, though out to one side, and feeling about as much strain on the line as if I were hanging from a cliff on the moon, and knowing

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I was going about five feet a second faster every second.

My idea wanting to be out to the side (and bless my impulses for realizing it was the one important thing!) was to keep my line and myself out of the beam. An ionic jet doesn't look hot from the side. But from straight on it's a lot brighter than an arc light — it's almost as tight as a laser beam — and I didn't want to think about what it would do to me, even trailing as I was a hundred yards aft.

Though of course long before it had ruined me, it would have distintegrated my line.

My being out to the side was putting the ship off balance on its jet and presumably throwing its course toward base and Shaula-near little by little into error. But that was the least of my worries, believe me.

I thought for a bit and remembered I could talk to Jeff over my suit radio. I decided to try it, not without misgivings.

I tongued it on and said, "Jeff. Oh, Jeff. I'm out here. You forgot me."

I was going to say some more, but just then he broke in, angry and so loud it made my helmet ring, with, "Joseph! Did you hear anything then?" A pause, then, "Well, clean the wax out of your ears, stupid, because I did! I think we got an enemy out there!"

Another and longer pause, while my blood curdled a bit thicker, then, "Well, okay, Joseph, I'll go along with you this time. But if I hear the enemy once more, I'm going to suit up and take a rifle and sit in the airlock door until I've potted him."

I tongued the radio off quick, fearful I'd sneeze or something. I had only one faint consolation: Joseph seemed to be a bit on my side, or maybe he was just lazy.

I thought some more, a mite frantic-like now, and after a while I said to myself, *Been going five minutes now, so I'm doing about a quarter of a mile a second — that's fifteen miles a minute, wow! — but out here velocities are purely relative. My suit does a little better than a quarter G full on. Okay. I'll jet to the ship.*

No sooner said than acted on — I was beginning to rely too much on impulse now. The suit jet killed my false weight at once and I was off, mighty careful to aim myself along my line or a little outside it, so as not to wander over into the beam.

Pretty soon the tail and Trompled Love were getting noticeably bigger.

Then a lot bigger.

Then my suit fuel ran out.

I'd built up enough velocity so that I was still gaining on the ship for a few seconds. In fact, I almost made it. My gauntlet was about to close on Trompled Love when the ship started slowly to pull away. Oh, it was frustrating!

I remembered then what I should have a lot earlier, and grabbed for the ship-end of my line so as not to lose the distance I'd gained — and in my haste I knocked it away

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from me. The only good thing was that I didn't knock it out of the notch.

Now I was losing space to the ship faster and faster. Yet all I could do was reel in the me-end of the line as fast as I could. Suddenly the whole line straightened and gave me a bigger jerk than I'd intended. I could see Trompled Love crumple a little. And I was swinging just a bit, like a pendulum.

I used a glove-friction to spread the rest of the jerk, but still I was at the end of my line and Trompled Love had crumpled a bit more before I was coasting along with the ship again.

My side of Trompled Love was bent back maybe twenty degrees. The eye of the beam shone at me from the tail like a pale blue moon. For quite a while it brightened and dimmed as I tick-tock swung.

Meanwhile I was beating my skull for not having thought earlier of the obvious slow-but-safe way of doing it, instead of that lunatic suit-jetting. I once heard a psychologist say we're mental slaves to power-machinery and I guess he had something.

Clearly all I had to do was climb hand-over-hand up the line to the ship. At moon gravity that would be easy. If I should get tired I only had to clamp on and rest.

So I waited for my emotions to settle a bit, and then I reached along the line and gave a smooth, medium-strength heave.

Maybe there is something to ESP — at least in a devilish sort of way — because I picked the exact moment when Jeff decided to feed the beam more juice.

There was a *big* jerk and I saw Trompled Love crumple a lot, so that it was pointing more than forty-five degrees aft.

Now there was a steady pull on the line like I was hanging from a cliff on Mars. And the eye of the beam was a blue moon not so pale — in fact more like a sizzling blue sun seen through a light fog.

After that I just didn't have the heart to try the climb again. Once I started to draw myself up, very cautious, but on the first handhold I seemed to feel along the line Trompled Love crumpling some more and I quit for good.

I figured that at this boost Jeff would be up to proper speed for Shaula-near in less than two hours. Well, I had suit-oxy and refrigeration for longer than that.

Of course if Jeff decided not to cut the beam on schedule, maybe with the idea of eloping with Joseph to the next solar system — well, I'd discover then whether suit-oxy running out would stimulate me to try the climb again alongside the beam.

(Or I could wait until he got her up near the speed of light, when by the General Theory of Relativity the line ought to be shortened enough so that I could hop aboard if I were sudden enough about it... *No, Joe Hansen, you quit that,* I told myself, *you don't want to die with the gears in your head all stripped.*)

Thinking about the beam got me wondering exactly how close I was to it. I unshipped my suit-antenna

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and pulled it out to full length — about eight feet — and fished around with it in the direction of the beam.

Nothing seemed to happen to it. It didn't glow or anything; but I suddenly got a little electric shock, and when I drew it back I could see three inches of the tip were gone and the next couple inches were pitted. So much for curiosity.

Next I reattached the antenna to my suit — which turned out to be a lot more troublesome job than unshipping it — and tongued on the radio with the idea of listening in on Jeff.

Right away I heard him say, "Wake up, Joseph! I'm going to tell you your faults again. I got a new way of cataloguing them —chronologically. Begin with childhood. You hitched sled-rides on airplanes. That was bad, Joseph, that was against the law. If the man had caught you doing it, if he'd seen you whizzing along there back of him, he'd have had every right to shoot you down in cold blood. Life is hard, Joseph, life is merciless. . ."

Right then I felt a tickle in my throat.

I tried quick to shut off the radio, but it is remarkably difficult to tongue anything when you have a cough coming. It came out finally in a series of squeaky glubs.

"Snap to, Joseph, and listen hard," I heard Jeff say. "It's started again. Animal noises this time. You know if they make spacesuits for black panthers, Joseph?"

I tongued off the radio quick, before the follow-up cough came.

I didn't have anything left to do now but think. So I thought about Jeff — how there seemed to be one Jeff who hated my guts and another Jeff who idolized me and another Jeff sneaking around in a jungle of sabertooth tigers and . . . heck, there was probably a good twenty Jeffs sitting around inside his skull, some in light, some in darkness, but all of them watching each other and arguing together all the time. It was an odd way to think of a personality — a sort of perpetual *Kaffeeklatsch* — but it had its points. Maybe some of the little guys weren't Jeffs at all, but his father and mother and a caveman ancestor or two and maybe some great-great-grandchild butting in now and then from the future. . .

Well, I saw that speculation was getting out of hand so, taking a tip from Jeff, I began to count my own sins.

It took quite a while. Some of them were pretty interesting reading, almost enough to take my mind off my predicament, but I tired of it finally.

Then I began to count the stars.

It was really the longest two hours plus I ever spent, except maybe the time my first big girl disappeared. But I don't know. The experiences are hard to compare.

I was about halfway through the stars when I went weightless. For an awful instant I thought the line had parted at last, but then I looked toward the ship and saw the bright little moon was gone.

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Right away I gave a couple of tugs on the line and began to close slowly with the tail. No trouble at all — actually my only difficulty was resisting the temptation to build up more momentum, which would have resulted in a crash landing.

I softed-in on Trompled Love okay, except there was a big spark. The beam must have charged me good. Then I worked my way to the true hull. After that there were handholds.

Finally I got to a porthole in the living quarters, and I looked in, and there was Jeff jawing away at my empty seat. I put my helmet against the hull and very faintly I heard him say, "Joseph, I'm still worried about the enemy. I keep thinking I hear him or it. I'm going to make us some coffee, so we'll stay real alert. You break out the guns."

I don't suppose anyone ever moved quite so quietly *and* so quickly in a spacesuit as I did then. I got in the airlock, I got her up to pressure, I got unsuited — and all in less than five minutes, I'm sure. Maybe less than four.

I swam to the cabin. It was empty. I slid into my seat just as Jeff floated in with the coffee.

He went real pale when he spotted me. I saw there might be some trouble this time with the Joseph-Joe transition. But I knew the only way to play it was real cool. I nested there in my seat as if I hadn't a worry or urge in the world — though my nerves and throat were just screaming for a squirt of that coffee.

"Joe!" he squeaked at last. "Mi-god, you gave me an awful scare. I thought you'd done a bunk, I thought you'd spaced yourself, I kept picturing you outside the ship."

"Why no, Jeff," I answered quietly. "One way or another, I've been in this seat ever since take-off."

His brow wrinkled as he thought about that.

I looked at the board and noticed that our terminal trip-velocity read fifteen miles a second. My, my.

Finally Jeff said, "That's right, you have." And then, just a shade unhappily, "I might have known. You always tell the truth, Joe — you're perfect." END

★★★

TO THE STARS

BY J. T. McINTOSH

ILLUSTRATED BY WOOD

To conquer space takes more than dreaming. It requires courage — and ruthlessness!

I

Charles Faulkner stood up, stretching himself to his full five feet three. "Of all times to have to go to Rigel," he sighed, "this is without exception my most unfavorite."

"You mean because you'll miss Bernice's wedding?" said his secretary sympathetically. "But you do have to go, C.F. Sending anybody short of the vice president and you has failed, so—"

"So why not send the vice president?" Faulkner said with a sardonic glance at her, daring her to be rude about Percy Gordon, the vice president of Faulkner Lines.

"So you have to go," said Susie decisively.

Faulkner looked out of the window. From the top of the Faulkner Lines Building, twenty-three floors high, it was possible, smog permitting, to see clear across the city to the spaceport. Today smog didn't permit. It was curious that mankind could now reach any place in his own galaxy, and was beginning to think about reaching others, and still hadn't beaten the smog. Any

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ignorant savage would think it was easier to banish the smog than invent super-light-speed space travel to get away from it ... thus proving, of course, that he was an ignorant savage.

"I'm not so sure," Faulkner murmured. "Percy has no imagination, sure. But that's why he's so useful. He goes all the way round his elbow to reach his thumb, but he always reaches his thumb. Revising the Rigel schedules ought to be a routine job. I'm not sure Percy isn't exactly the right man to handle it."

Susie stayed significantly silent. Faulkner Lines was still a one-man empire. All the big decisions were made by nobody else but Charles Faulkner, who was generally capable of making them without turning a hair. Susie's approval when he was right and disapproval when he was wrong didn't have to bother him. But being a very good secretary, she liked to keep it that way — approval when he was right and disapproval when he was wrong. She wasn't going to start approving just because he wanted some excuse, any excuse, to do what he wanted to do instead of what he knew he had to do.

Apparently Faulkner accepted the verdict. "Okay," he said, "I'm going to Rigel." He shot another sardonic glance at her. "Keep things running my way while I'm gone, but don't let Percy know that's what you're doing."

"Tell me one thing. If anybody asks why you're traveling by Transgalaxy instead of Faulkner Lines, what do I say?"

Faulkner's eyes narrowed. "Say there isn't a Persephone flight for six months."

"Sure, but a Persephone left a week ago. Suppose somebody asks why you weren't on that?"

"I was busy. I couldn't go till now, and had to book by Transgalaxy. That's all you know, and it's all there is to know."

Susie nodded. "One other thing. A man has been trying to see you. Some kind of crank is my guess. No sane man would be that insistent."

"Wouldn't give any reason? Wouldn't talk to anybody but me?"

"No."

He nodded. "I know the type. Go on keeping him out of my hair. Well, Susie, keep your nose clean while I'm gone — and Percy's too, if you can."

She said nothing. Although Faulkner could say what he liked about Percy Gordon, Susie never allowed herself any liberties. Theoretically the vice president was far more important than the boss's private secretary. But only in theory.

Faulkner made the descent in his private elevator. On the ground floor he had a choice of three exits, two quiet ones and the other through the main foyer. He chose the last because he wanted to pick up the helicab.

Nobody noticed him so he crossed the huge deep-carpeted hall with its central model of the galaxy. Nobody noticed him, by order. Long ago, when he found he couldn't cross the foyer without causing first

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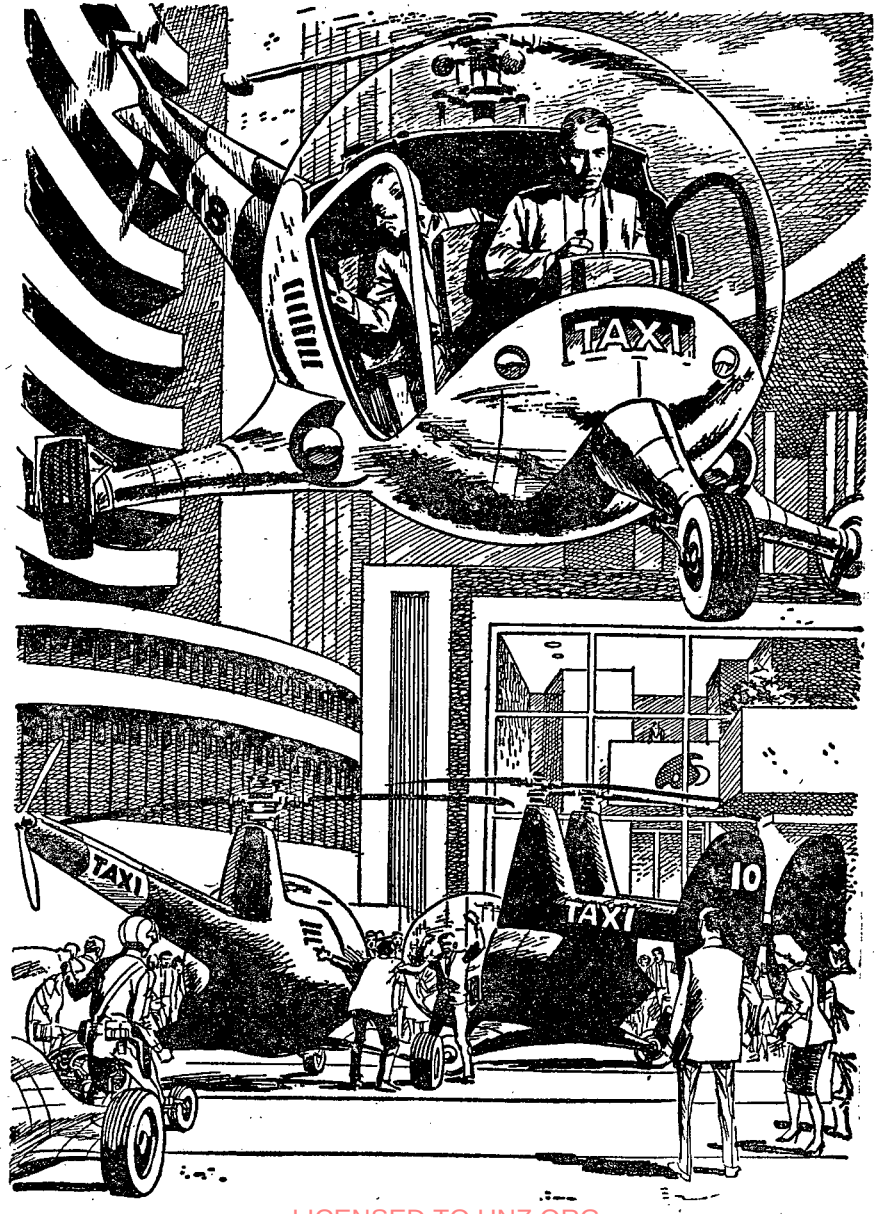

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a hush and then a rustle of whispering from the men and girls in the booths all round the hall, he had sent out a staff notice saying the first employee who noticed him would be fired.

It hadn't been necessary to fire anybody. Charles Faulkner had become the Invisible Man.

Certainly nobody other than employees would be likely to notice him. Charles Faulkner, of Faulkner Lines, was known to be worth more millions than he could count. And it was well known that such a man must be eight feet tall. This little squir. couldn't possibly be the great Charles Faulkner.

Outside the huge swing doors — there were twelve of them — Faulkner went to the landing area and stopped there. From the helicab rank on top of the supermarket, two hundred yards away, a green cab rose to pick him up. Cities didn't have space any more for even helicabs to wait in handy positions for fares. The drivers had to park in otherwise useless places, like the flat top of the supermarket, and watch the small landing areas for intending passengers. A maximum of one minute was allowed to land and pick up a fare.

It wasn't the green cab which picked up Faulkner after all. As it rose to make the short hop to the landing area, another helicab rose too quickly. The rotors touched briefly.

Neither machine was badly damaged, but the two drivers landed at once and instantly engaged in the traditional wrangle, shaking their fists at each other and completely forgetting for the time being that such things as fare-paying passengers existed.

Meantime a red cab landed and Faulkner was whisked away.

He was thinking of the helicab accident. Levels of flight were now rigidly controlled, but there was one level common to all flights — ground level. And helicab accidents, frequent if seldom serious, naturally occurred most often within twenty feet of the ground.

Idly he considered the possibilities of a cab tower — a simple column consisting of little more than an interior elevator, with perhaps a hundred platforms from which cabs could pick up passengers. Such a system could be made far safer, he was sure, than the present practice of picking up passengers invariably from the ground. He didn't follow the idea out very far, for Faulkner Lines needed his whole attention and he wasn't really interested in going into the helicab business. Still, it might be worth making a few inquiries.

Suddenly he started. He had told the cabbie "Spaceport," and left it at that. But there were green fields below.

There were no green fields on the way to the spaceport.

"Spaceport," he repeated. "I did say—"

"I know what you said," the driver retorted, turning his head. "Before we go any further, Mr. Charles Faulkner, you'd better understand that I've got my right thumb on a thumblock. If it comes off the en-

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gine stops. Is that clear, Mr. Charles Faulkner?"

"Perfectly clear," said Faulkner coolly, although he was mentally flaying himself. That business of the cabs should have alerted him. The first cab in the rank had been deliberately put out of action by an accomplice of this man. Then the driver of the red cab dropped in the landing area from God-knows-where and Charles Faulkner, like any ordinary idiot, unsuspiciously stepped inside.

"It's ransom you're after, I guess?" Faulkner went on. "It'll be difficult to collect. Nobody in the company can handle big money except me."

"It isn't ransom," said the driver. Like Faulkner, he was a very small man. His eyes were sharp and black, his face eager, alert, suspicious. And there was something else in it. Faulkner had never seen such greed in a human face before. Greed lit it from within like a beacon.

I'll pay him, Faulkner thought contemptuously. *I'll pay him what he wants and not even set the cops on him. Whatever I give him will only help to destroy him. A man like that can never have enough. He'll go on grasping until one day he grasps a rattlesnake.*

"Do you have a name?" Faulkner asked.

"You can call me Smith."

"What do you want, Smith?"

"First I'll tell you what I have to sell. I know about the Persephone, Faulkner."

Faulkner didn't allow his face to register even mild surprise or interest. "I should hope so," he said. "Faulkner Lines is built on the Persephone ship. Naturally I hope everybody knows about her. Even you."

"Very funny," Smith sneered. "And a good coverup, if I was only guessing. But I'm not guessing. I know. The Persephone is a lemon, Faulkner, and you know it. She's a dangerous ship, a ship with bugs in her, and you and your technicians not only know that, you know what the bugs are and you still can't get them out. Meantime, dangerous or not, you're running Persephones all over the galaxy and making millions doing it because she's faster than any other ship."

"You're right about one thing. The Persephone is fast."

"And I'm right about all the rest too. How do I know it? I've overheard visiphone conversations between you and your technical boss, Tom Breck. He's the man who designed the Persephone — and even he says she stinks!"

"It would be interesting to know how you tapped the line," Faulkner mused. "But not really important. Have you any proof?"

"Recordings of the conversations."

Faulkner smiled slightly. "You fail to disturb me. I said, have you any proof?"

"I know that five of the Persephones you supplied to the Navy have blown up. And three of your spaceliners disappeared with over two hundred passengers."

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The helicab hovered motionless over a field of corn. This must, of course, be the man who had been trying to see Faulkner, who would speak to no one else. It was pretty difficult, Faulkner admitted, to get near him. In future he'd make it even more difficult.

"You know that — and so does everybody else. It's no secret. Nobody can run a spaceline, any more than an airline, without an occasional accident."

"But you're using a dud ship. You can't afford to be investigated. One hint of this and Faulkner Lines is finished."

It was true, Faulkner reflected, that such accusations could be damaging, whether well founded or not. The smear campaign had always been a deadly weapon. It would be best to buy this man off, if that was possible. But he'd have to be sure Smith stayed bought. Worse than anything Smith could say now would be the disclosure that Charles Faulkner had tried to silence him.

"Suppose I tell Information Inc. that you're running a spaceline based on a ship that you know is a killer?" Smith sneered. "That instead of withdrawing the Persephone until you can make her safe, you're building more and more ships and risking the lives of thousands of passengers every week?"

"Suppose you do?" said Faulkner, temporizing. It would be stupid to point out to Smith the weakness of his position. It was possible, after all, that Smith didn't know it.

News, not morality, was the business of Information Inc., that vast clearing-house for all the news of the galaxy, whether of feast, flood, famine or felony, scare or scandal, society or science. Since what mattered was collecting information, not the motives of those who supplied it, II accepted anonymous calls on X (untraceable) lines, and without doubt Smith intended to take advantage of this dubious privilege.

Faulkner was aware, however, as perhaps Smith was not, that the police department had recently won a long, hard battle and that X calls which concerned murder and blackmail "but nothing else" were now instantly transferred to A-G lines — and traced.

If before Smith called Information Inc. Faulkner had alerted the police, Smith would be putting his head into a noose. Like most blackmailers, Smith had to gamble that Faulkner would be too scared to call his bluff.

"You're hoping that some day before you're found out," Smith went on, "you'll be able to say you've found a flaw in the Persephone and fixed it. But the truth is, you know all about it and you've always known. You're a murderer, Mr. Charles Faulkner. You've already murdered three hundred Navy men and more than two hundred Faulkner Lines passengers. And you're going to go on murdering until the poor suckers who book passages in your ships find out the truth!"

Faulkner looked thoughtfully at

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the man in the driver's seat. The force of the metaphor struck him. Was Smith really the man in the driver's seat? Was what he knew or guessed or imagined as important as he thought? If it were revealed, would an angry mob stone the Faulkner Lines building and tear Charles Faulkner limb from limb?

If there was no doubt of this, Faulkner would have to pay Smith, no matter what he asked. But was anything ever beyond doubt?

"Despite your righteous concern over this appalling situation," Faulkner said slowly, "you could be persuaded to stay silent for a small sum?"

"No," Smith said. "A very large sum. A very large sum indeed. In fact, twenty million dollars."

Faulkner affected amusement. "At least nobody could accuse you of modesty."

"Twenty million, I said."

"I heard you. Suppose, merely to avoid inconvenience to Faulkner Lines, I offered you ... say ... twenty thousand?"

"Drop dead."

"I'd pay you $20,000," Faulkner mused. "It wouldn't do you any good, of course. A drop in the bucket to a man as avaricious as you. Still, it would help you fulfil your destiny — which is to ask for too much and get kicked to death in some dark alley."

"Don't you try anything on me, Faulkner. I can look after myself."

"So you think. You said 20,000,000? I said 20,000. Twenty thousand is my limit."

"And twenty million is mine."

"I really believe you mean it. Suppose I offered ten million?"

"If you offer ten million you'll pay twenty."

"True. If I offered ten million, I guess I *would* pay twenty. But I don't. It's 20,000 or nothing."

There was silence until Faulkner himself broke it. "You'll never be a successful blackmailer, Smith. You don't know the first rule, which is never to be too greedy. All information has a value, great or small. The concealment of certain information, or even certain conjecture, can also have a value. Ask around the right figure and you get it. Ask too much and you get nothing. Nobody but a fool pays too much for anything."

"If I don't get 20,000,000 I turn all I know over to the newspapers!"

"You don't get more than twenty thousand."

Smith was angry. He sensed defeat. Faulkner didn't talk like a man who had any intention of weakening. He talked like a man who would pay out a relatively small sum like twenty grand to avoid a certain amount of difficulty and embarrassment, but who would not under any circumstances allow himself to be bled.

Smith made a last effort. "This will break Faulkner Lines, and you know it. It's crazy to be so stubborn you won't pay out twenty million to save something worth billions!"

"It's even more crazy to take nothing when you could have twenty grand."

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Rather to Faulkner's surprise, Smith turned the helicab and sent it skimming back to the city.

"You might as well take me back to the FL Building," Faulkner said. "I admit this much. You can hurt Faulkner Lines enough so I'll have to stick around to deal with the situation instead of going to Rigel."

Smith didn't answer immediately. Then he said: "I'm going to call you in an hour. If you haven't changed your mind, Information, Inc., gets all I know."

"Fine," said Faulkner comfortably. "Know something? I didn't really want to go to Rigel anyway."

The vicious way Smith set down the red cab showed the trend of his thoughts. And he barely allowed Faulkner time to step out before flinging the helicab skyward again.

It would be a waste of time trying to trace it, Faulkner decided. Smith would have ditched it before he could reach a phone.

II

Susie stared as Faulkner returned. "Shoot Percy off to Rigel," he said curtly. "Don't let him argue. He'll have to bolt like a rabbit to catch that ship."

Susie took the hint and didn't argue either. She left the office without a word and was back within five minutes. Faulkner was sitting at his desk, mentally checking everything he was going to say and do.

"He's on his way," Susie said. "What's come up?"

"Blackmail. Somebody wants twenty million dollars not to tell II that the Persephone is a hot ship."

Susie whistled. "What has he got?"

"Recordings of conversations between me and Tom Breck. Not enough to prove anything. Enough to raise a doubt in a lot of people's minds."

"Then this could be serious?"

"Easily."

"There's nothing in it, is there?"

"Your first job is to draw up detailed accident figures on the Persephone, the Blue Hunter, the Silverstream and a few other current deep-spaceship types. I think they'll prove there's nothing in it."

"Okay. What are you going to do?"

"Contact the police."

Susie visibly relaxed. "Then you've nothing to hide."

"Susie, the last thing that matters in a case like this is the truth. What people think is always a lot more important than the truth. And often a lot tougher to handle."

She frowned at him for a moment, doubtful again. But she didn't waste any more time before getting started on the job he had given her.

Susie Raglin had been Faulkner's secretary since she was a well-stacked twenty-two. In those days, of course, she had been an assistant secretary, not yet Faulkner's right-hand woman. Once or twice she and Faulkner had experimented with a relationship which wasn't entirely business, and not entirely platonic. This had been before Faulkner's wife died but after she became a helpless invalid. The brief

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intimacy had brought them both some pleasure and no tears. When it ended they were friends and business associates, tied together by everything short of love.

Now Susie was forty-one and prematurely shapeless. The last time she had taken any exercise had been in her teens. She still had an attractive face, however; it had never gone hard and coldly efficient like the faces of so many women who put business before pleasure.

In the nineteen years she had been with Faulkner — sixteen of them as his confidential secretary — she had become, as so many women secretaries do, absolutely invaluable to him. That the company had grown, in those nineteen years, from a merely interplanetary freight transporter using slow, antediluvian rocket-ships of an intragalactic passenger service which, if not yet the biggest, was the most feared by all the other big companies, was due in very large measure to Susie Raglin.

Women probably never would get equality in business, partly because women never trusted women and men sometimes trusted men, partly because women didn't really want equality. In the year 2257 A.D. their position was certainly very different from what it had been in 1857 and in 1907, but not very different from their economic status in 1957. What women really wanted was happiness and security, and they didn't find these things in achieving sole control of large businesses. Neither did men, for that matter. But men took to the natural dichotomy of business life and family life better than women.

Susie could probably have been vice president of Faulkner Lines instead of Percy Gordon if that had been what she wanted. It wasn't. She had what she wanted, short of meeting the man for whom she would have given up everything. That would never happen now. Her only child was Faulkner Lines.

They worked calmly together in the same office, Charles Faulkner and Susie Raglin, taking the crisis seriously but assuming that there was a way to handle it and that they would find it.

Faulkner called the police by visiphone and explained the situation. A blackmailer who called himself Smith would phone Faulkner's office shortly, probably on an X line. The cops would be able to listen but not to trace the call. That didn't matter — not if Smith then called Information Inc., where even X calls could be quietly switched to open lines.

After the call to II, if Smith went through with it, the cops would pounce. There would then be quite enough evidence to put him out of the way until he had a long gray beard.

But that didn't mean that Faulkner wouldn't have a job on his hand afterwards. Nobody liked blackmailers and there was a general tendency to protect the victim, especially a courageous victim. Such an accusation about such a business colossus as Faulkner Lines, however, was news. And II, which

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was more interested in the facts than the source even in blackmail cases, was constitutionally incapable of sitting on such stories. II would be curious. II would want to know all about it. And if II wasn't told the facts, it would guess.

And what II knew one moment, the whole world knew as soon as it took in the next newscast, teleprint or flash recording.

Having alerted the police, Faulkner phoned Tom Breck, who was at the Persephone machine shop. Briefly he explained the position and went on:

"Tom, I guess it would be best if you don't talk to anybody."

Susie looked up at this.

"Yes," said Breck quietly.

"If any reporters want your end of the story, you say nothing beyond 'no comment.' "

"Yes."

"I'm going to tell them the truth, Tom, or as much of the truth as they'll understand."

"Yes."

"And I'm not coming to see you for a while. I'm not even going to phone you. We're old friends, Tom, and I know you. *I* know if you painted the Mona Lisa you'd frown at her, dissatisfied, and say she wasn't very well drawn. But people who don't know you are liable to think you mean what you say."

"I always mean what I say."

"Sure. You spend all your life working on the Persephone and then say she's no good!"

Since Breck appeared to have nothing to say to this, Faulkner cut the conversation.

Catching Susie's eye, Faulkner said: "Susie, we just can't afford to have Tom Breck in on this. It was his chronic self-doubts that started this business. I don't know exactly what Smith's got, but I know it must be something Tom said, not what I said."

Susie nodded.

Smith made his call on time. Faulkner took the call in Susie's presence, but without letting him see her.

Perhaps Smith believed that Faulkner wouldn't let anyone listen in on such a potentially dangerous conversation. And perhaps by now he was so disappointed he was past caring, seeing his dreams of enormous, easy wealth going up in smoke.

Smith was still demanding twenty million, no less, and he had nothing more to say than he had said in the helicab. He said it all again, even more angrily than before.

Faulkner did not repeat his offer of twenty thousand.

When Smith furiously broke the connection, snarling as a parting shot that Faulkner had just cut his own throat, Susie came over and laid a single sheet in front of Faulkner.

"Is that what you want?" she said. "You were right, C.F. In hours of operation and light-years traveled, these figures show the Persephone is as safe as any ship. Of course, since she's faster than all the other deep-space types, the hours of operation ratio to lives lost isn't as good as the distance-traveled ratio.

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The space-only figures show the Silverstream up as safer than the Persephone, but—"

"Take them out," Faulkner said. "The Silverstream lands, the Persephone doesn't. Naturally a lot of the Silverstream's accidents happen on landing and takeoff. To give a true comparison, you'd have to include *all* Silverstream accidents in the record, and include in the Persephone figures any accidents on tenders transporting passengers from planets to orbiting ships."

"I was going to say," Susie observed patiently, "that when you count in accidents on tenders, the Persephone becomes much safer than the Silverstream in light-years traveled per passenger lost, because there are hardly ever any accidents on tenders."

Faulkner nodded. "That's about what I thought."

"Do you want me to include figures for *all* technical mishaps on Persephone flights, not just those leading to loss of life?"

"No, certainly not. Because of her type, the Persephone has more of those than any other ship. Why ask for trouble?"

"But if we've nothing to hide—"

"Susie, we're not preparing these figures for experts who would take it for granted that a non-rigid ship operating on the integral-drive system must have more minor structural failures than a rigid pile-driven ship designed for planetside landing. We're preparing them to be shown, if necessary, to the man in the street. All we want is the record involving injury and death."

He paused. "Besides," he added in a different tone, "other spacelines don't reveal comparable figures, so why should we?"

"I just thought if we're really satisfied that—"

There was a click behind them. They both turned, shocked and incredulous that anybody should have been able to get into Faulkner's private office unannounced.

Then they relaxed. It was Bernice.

"I heard you didn't leave on the Rigel ship, pop," she said. "I'm glad. If you hadn't been at my wedding I'd have felt practically illegitmate."

She ran lightly to them and they kissed affectionately.

That it should be a highly charged emotional moment was natural. Bernice was getting married to Sam Endel on Saturday and leaving with him for Bascom III on the following Monday. Sam's firm, United Plastics, were sending him to take charge of a new branch on Bascom III. If Charles Faulkner had left for Rigel, it must have been many years before he saw his daughter again, if ever.

He would be lucky if he ever saw his grandchildren.

Interplanetary space travel was taken almost as lightly as crossing the street, but the long hauls half across the galaxy were risky and, most of all, expensive. Since the pioneering spirit in man was by no means dead, colonies kept on being established. And colonies established colonies, and the frontier of human dominion kept

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on being pushed farther and farther out.

Until galactic travel was an accomplished fact, it had always been carelessly assumed that people would jaunt about the galaxy unrestricted by anything but the duration of the journey — which must be considerable, even at many multiples of the speed of light. Few people worked out what such flights would cost.

An extremely expensive ship with a highly trained, highly paid crew had to spend a very long time transporting a small number of people from one side of the galaxy to the other. The payload of any ship on any long trip was always reckoned in millions of dollars. A simple statement clearly showed why:

Cost of ship:	$4,000,000
Life of ship: Three return cross-galaxy trips (average).	
Salaries (for life of ship on this basis):	$3,000,000
Expenses (fuel, food, etc.):	$1,500,000
Total:	$8,500,000
Total number of cross-galaxy passages:	420
Cost of cross-galaxy passage before profit:	$20,240
Cost to passenger:	$25,000 up

And the actual cost of one of the longest journeys was liable to be considerably more than this, when insurance and taxes were included. Planets of arrival and departure could slap on travel taxes as they liked. Worlds which wanted to keep people out (which were few) imposed big landing taxes. Worlds which wanted to keep people in (which were many) imposed big taxes on outward fares.

The fact that Faulkner owned and ran a space-line made it more, not less, impossible for him to visit his daughter on such a distant world. Business men were no longer great travelers. Time was money, and space-travel was expensive both ways. The only people who could save anything on the deal were creative artists, who could paint, write or compose on the trip.

Bernice was a tiny brunette, small and slim enough to be taken for a child more often than she wished. Faulkner was only five-three himself. Bernice needed a moderately high heel to achieve five feet. Sometimes it was fun to be able to pass, at a casual glance, for fourteen or fifteen. But the joke had worn thin.

"How did you hear I'd stayed behind?" Faulkner asked.

"You know there are always newsmen at the spaceport. One of them phoned me and asked why you hadn't left. I couldn't tell him. Why didn't you leave? Feelings of paternal duty?"

"No, darling, though I was glad enough to stay. No, it was a business matter."

"What kind of business matter?" demanded Bernice, who had never been told that little girls should be seen and not heard.

"You'll know very soon."

And she did — for Smith didn't have the sense to make the best of a bad job and quietly disappear.

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III

Faulkner's office was quite big enough for a press conference. This one was fairly select. The newspapers knew they had to watch the legal angle when dealing with a colossus like Faulkner Lines — it was no use sending along reckless reporters who would listen with half an ear to what Faulkner cared to say and then dash off a towering denunciation of Faulkner's private and professional life, full of fire and fury and actionable inaccuracies.

What Smith had said to the newspapers was considered relatively unimportant and was not mentioned. What the conference was about was the tapes Smith had made of private conversations between Faulkner and Tom Breck.

Faulkner could of course have claimed invasion of privacy and tried to obtain interdict against disclosure of the content of the tapes. Instead he began by having the tapes played back in his presence, promising to state whether they were genuine or not, like any honest man with nothing to hide.

Bernice was still with him. Susie was engaged elsewhere.

The first tape began in mid-sentence. Although the quality was poor and the hum level high, all the words were clear enough.

Faulkner was speaking: "... nowhere near the Persephone's level of performance, Tom. Personally, I think the day of the planet-based spaceship is all but over. The Silverstreams and Blue Hunters that the other companies use are obsolescent. Soon all ships will be assembled in space like the Persephone."

Tom Breck's quick, nervous voice answered: "Perhaps, Charlie. And perhaps the Persephone is a psychological flop, as I always thought it might be. Silverstreams land at spaceports ... passengers step from solid ground into a great silver ship, live a comfortable one-G life for the next few months without ever having to look out into space and step out of their ship onto solid ground. Persephone passengers have to go up in a tender and make a weightless transfer to a great clumsy object that looks like a lot of old tin cans tied together. And there's an even more serious psychological disadvantage. Persephone passengers in deep space know they're on a ship which can never land, no matter what the emergency. They can't get down except on worlds equipped with suitable tenders."

"Tom, you let me worry about things like that. You designed the fastest ship in the galaxy, and to get all the advantages you did get you had to break right away from the conventional idea of a spaceship. It's up to me to educate the public into accepting the Persephone, and I'm doing it, slowly but surely. Every year more people who would have traveled by Silverstream or Blue Hunter are changing to Persephone—"

"They wouldn't if they knew what we know."

"Tom, for Pete's sake don't start on that again."

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"I can't help it! I feel like a murderer, Charlie. At this moment, somewhere in the galaxy, it may be happening again. And I won't know about it for months."

"It's nothing to do with you, Tom — apart from your work on modifying and improving the design, that is. Hell, the owner of a shipyard doesn't feel guilty every time a ship he built sinks."

"No, but there's a flaw in the Persephone. I built it in with all the other..."

Just as the conversation reached its most vital point, the voices faded.

The nine reporters present, seven men and two women, who had been watching Faulkner closely, shuffled and coughed. The recording quality being poor, everybody had remained still and silent in order not to miss a word.

Benson of the *Today* program, a tall, thin, red-haired man with an abrupt, penetrating manner, shut off the playback for the moment.

"Is that conversation genuine, Mr. Faulkner?" he asked.

"Yes. It took place about two weeks ago."

"What was said after that?"

"We went back to talking about the psychological disadvantages of the Persephone design."

Benson suddenly barked with laughter. It was a loud, coarse sound. It said "in a pig's eye."

Faulkner had to ignore it. If a man called you a liar, you could insist on fighting him outside. If he merely laughed, you looked a fool if you tried to make a big thing out of it.

It was another reporter who asked the question they all wanted to ask; "What was the flaw Tom Breck talked about?"

"I understand there's more on that tape," Faulkner said. "Hadn't we better hear the rest first?"

Benson, at the machine, hesitated. It was obvious to everyone present that there was an opportunity here of trapping Faulkner. Not knowing the rest of what was on the tape, Faulkner, if he talked now, was liable to say more or less than he needed to say. He might be caught out in lies. On the other hand, he might admit more than the tape itself would show.

But the atmosphere was still polite. Faulkner was talking openly, or pretending to be open. Nobody wanted to antagonize him just yet.

So Benson brayed again, but started the machine.

The quality of sound was better this time. Faulkner's voice came through clearly: "Call in all Persephones? You know that's impossible, Tom."

"That's what I'd do." Breck's rather high, thin voice was stubborn now.

"Tom, there are thirty-seven Persephones spread right over the galaxy. More than half of them will never return to Earth. You know it takes years to replace our fleet throughout the service. It's taken us five years to build up an operational service of..."

That was all, a mere snatch of conversation. Soon, however, the same voices started again, so weak this time that Benson had to turn

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up the volume. Some phrases were lost altogether in hiss and background noise.

It was now clear that Smith had not obtained these recordings by tapping wires at all. He had had a microphone hidden either at Faulkner's end — which Faulkner decided was out of the question — or at Tom Breck's. He must have done a lot of listening, and recorded only when he thought something important was going to be said. Alternatively, these were edited excerpts, the only significant sections from hours of useless material — useless from Smith's point of view.

Breck's voice came thinly: "Why? Listen. Integral drive is applied to 7,317 separate ... sixty per cent of the duration... We know that in every day of operation the chances are only ... that feedback won't develop in any particular unit. We're calling it feedback now because that's nearer what happens than fatigue. The unit in effect ..."

After several seconds in which nothing at all could be distinguished, Faulkner's voice came through: "Who have you talked to about this, Tom?"

"Only you, Charlie. And it does no good, does it? You'll never call in all the Persephones. But of course you've too much sense ever to travel on them, haven't you, Charlie?"

After that last pregnant remark there was silence.

"That's all," said Benson, switching off the machine. "What do you want to say about it, Mr. Faulkner?"

"That it's very little to have caused such a fuss. Smith was crazy if he thought I was going to pay twenty million for that."

"You mean there's more damaging things that he might have got but didn't?"

"Yes."

A couple of the reporters blinked.

Susie came in quietly. Faulkner, catching her eye, saw that what she had to say was favorable, and nodded his permission for her to say it to everybody.

"You might like to know," she said, "that the police have just arrested the blackmailer. His name's Arnold Steinberg, and he's a clerk at the Persephone factory."

"They're holding him on a blackmail charge?" Faulkner asked.

"Of course."

Bernice had been silent for a very long time, for her. "There's your source of information," she sniffed. "A clerk being held for blackmail. And I heard that tape. Let's all go home, huh?"

Benson looked her over thoughtfully. He was more than a foot taller than she was.

"There's something I'd like to ask you in a minute, Miss Faulkner. But first let's hear from your father. Maybe he'll tell us why Tom Breck isn't here to explain his side of what we just heard?"

Faulkner nodded. "I'll take that first. You must have got some idea of what Tom's like from that tape. He's a worrier. He's spent all his life worrying. Tom's fifty-seven, a little man like me, and he weighs exactly a hundred pounds. He never

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married. He spends all his time working on the Persephone.

"Tom's been with me since the beginning. As well as being a designer, he's a top-notch engineer and mechanic. At first he helped to keep the old fleet we used to have running. But he always had a dream in his head, the Persephone. I can't say exactly when he designed her, because he'd been working on the idea since he was at college.

"To Tom, the ship had to be perfect. When at last we were able to build the first Persephone, seven years ago, you think he was happy? Not Tom. The trials exceeded my wildest hopes, but Tom was miserable. He had expected more."

The nine reporters listened silently, seeing the story fade away like butter in a hot pan. It could have been a big news story: *Charles Faulkner blackmailed — Persephone in a hot ship—Spaceline gambles with passengers' lives.* But their interest was lessening with every moment. The blackmailer was a two-bit clerk who didn't have the sense to know when a poor bluff had failed, and couldn't even handle things so that if he didn't get any money he'd at least stay out of jail. And the Persephone designer's doubts looked as if they arose simply out of chronic, characteristic self-doubt.

Faulkner was convincing because these hard, cynical men and women knew the truth when they heard it, which was seldom. They could check on what he said about Tom Breck, but few of them were going to bother.

Faulkner came easily to Breck's most damning remarks, what he had said on the last, badly-recorded snatch. First Faulkner filled in the gaps, not guaranteeing exact words but certain of the sense.

"The Persephone works on the integral-drive system," he said. "That means that instead of having power at front or rear driving a rigid ship, integral drive is applied to 7,317 separate components. Now, there is a certain danger in any integral-drive system. That's what Tom was worrying himself sick about. Metals to which integral drive is applied may eventually develop what we used to call fatigue, because it resembles vibration fatigue in that the metals become crystalline. When this happens, the unit concerned stops reacting to the integral-drive impulse and becomes neutral."

"And that means?" Benson prompted.

"Usually, it comes off."

"You mean pieces tear themselves off the ship?"

"Not quite. It would be more accurate to say that the ship tears itself away from the crystalline unit."

There was a stir of interest again. A man who had not previously spoken said drily: "This is what you meant when you said there were more damaging things that Steinberg might have got?"

"Yes. I'm being perfectly frank, gentlemen — ladies and gentlemen. When Tom designed the Persephone, the theoretical possibility of fatigue, or feedback as he now calls it, was known. It was, and is, one of

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the inherent snags of integral drive. Please remember, however, that it occurs very seldom. Unlike metal fatigue, which shows up in set conditions at a predeterminable time, feedback may occur at any time in the life of a unit. Our tests have shown, however, that the maximum likelihood occurs somewhere around 300 days. In practice, we take it that if feedback's going to occur it doesn't generally happen while units are new. And if it hasn't happened after say 400 days of operation it's never going to — in other words, that unit is safe."

"But when ships are about 300 days old they're liable to blow up?" said Benson bluntly.

Faulkner laughed in protest. "Please . . . do you imagine anybody would run a spaceline like that? And if they did, can you imagine them frankly explaining it all?"

First of all, he said the critical figure was 300 days of integral-drive operation, not the age of the ship. This figure wasn't usually reached until a ship was over two years old. Secondly, since feedback was a known hazard, the Persephone was designed to cope with it.

"It's always been known," he said, "that if there's a hole in a rowboat it may fill with water and sink. It's accepted, too, that there are many ways in which a hole may be formed. But that isn't regarded as sufficient reason for not using rowboats.

"Persephones are so constructed that sections can be lost without impairing the safety or efficiency of the ship as a whole. Moreover, integral drive is applied in rotation so that the various units reach and pass their critical point at different times."

Calmly he explained the system by which the risks attendant on feedback were reduced to a minimum. Several times he introduced parallels in other fields, and occasionally with other types of spaceship. He showed them Susie's safety figures. He answered every question with utter confidence. He offered to let them interview integral-drive experts and experienced Persephone crews. He showed them the Navy report on the Persephone.

And one by one the reporters closed their notebooks. There was no story here. An uninformed clerk — they all remembered that he was a clerk, not a technician — had listened in on talks between his boss and Faulkner Lines' chief designer and thought he had stumbled on something. . . .

But he hadn't.

Spacetravel was obviously dangerous. Ships could be lost in many ways. And if a particular ship was more prone to one kind of risk, it was less prone to another. Persephones had a problem which Silverstreams hadn't. But then, Silverstreams had atomic-pile problems which couldn't happen on Persephones.

There was only one thing left. Benson brought it up at last. "You've never made any long-distance trip on a Persephone yourself, have you, Mr. Faulkner?" he asked.

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"The occasion has never arisen."

"It could have arisen last week, when a Persephone left for Rigel."

"It was impossible for me to travel last week."

"Your daughter leaves for Bascom III in a few days' time. Her passage is booked in a Silverstream of Ace Transportation. Yet an FL Persephone leaves for Bascom II on Saturday, and takes three months less for the trip."

Bernice stepped forward. "My fiance Sam Edel is being sent to Bascom III by his company, United Plastics. You'll find if you check that they arranged all the details of our passage. We weren't consulted."

"Wouldn't it seem natural, Miss Faulkner, that you and your husband should travel by your father's spaceline?" Benson asked.

"It would. It did. Check with United Plastics. You'll find they have a long-term contract with Ace Transportation. Ace quotes special rates for them."

"Couldn't your father quote a special rate for his own daughter and son-in-law?"

"No doubt," said Bernice with quite remarkable patience, for her. "The point is that Ace Transportation carries all U.P. employees. Still, since the trip is our honeymoon, maybe we could arrange something special, at that. Sam could travel by Ace and I could go by Persephone."

There was a hard chuckle from the reporters.

And that was that. The meeting closed on a note almost of boredom.

Faulkner had won and Arnold Steinberg had lost out. Steinberg would have been well advised to take the $20,000 Faulkner had offered.

For as the meeting closed, everybody knew that nothing the newspapers represented were going to print would do Faulkner Lines much damage.

Susie found herself remembering what Faulkner had said before the reporters arrived: "Susie, the last thing that matters in a case like this is the truth. What people think is always a lot more important than the truth. . ."

IV

The wedding of Bernice Faulkner to Sam Endel was treated by the news services purely as a social occasion. The brief scare about the safety of the FL ships was not forgotten, but it was dead for all that.

Nobody had gotten anything out of Tom Breck. Every time a reporter managed to corner him, he said merely: "No comment."

Today screened a few interviews illustrating the effect or the Faulkner Lines bookings of the incident. Faulkner gave the actual figures freely. There were a few panic cancellations, and then a strange rush of new bookings. The only possible explanation was that some people regarded any publicity as good publicity.

And Arnold Steinberg was in jail. He never did mention that Faulkner had offered him $20,000 and that he refused it. Perhaps, belated-

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ly, he realized what a fool he'd been not to take it. Perhaps he even realized that if he said he'd been offered $20,000 and had turned the offer down, nobody would believe him.

Bernice was a pretty bride although she couldn't flutter and blush, because she didn't know how. She looked so absurdly tiny and childlike that the color of her dress was a shock. It was neither white nor any of the neutral hues; although modestly knee-length, it was a shade of crimson which stated firmly that she and Sam were lovers already and didn't care who knew it. And when she said "I do," she and Sam exchanged glances and nearly burst out laughing, remembering a pre-marital discussion when it had been agreed that the correct answer should really be:-"I did."

Charles Faulkner, as well-dressed as a man in his position was expected to be, was grave and gay by turns. Susie was with him, looking rather like the bride's mother.

As well as the ordinary cameras, an empathy camera was there, since public interest was high enough to make it worth while and none of the principals had refused to submit. Working clumsily but faithfully on the clues it recognized — heartbeat, body temperature, gland activity, brain patterns, all picked up from ten feet distance — it reported sentimentally that Sam loved Bernice and Bernice loved Sam, slobbering over the details which were normal except that Bernice was having more fun than most brides did out of this relatively early stage of the proceedings, the wedding ceremony. A prurient swoop on Faulkner and Susie yielded disappointingly negative results. They seemed to regard each other exactly as an employer and secretary should, and Sam and Bernice exactly as they should. For once, the rather rare opportunity to use an empathy camera, live, at a public ceremony failed to produce even a whiff of the scandalous, the secret or the abnormal.

None of the reporters and cameramen present, and there were plenty of them, had been at the press conference Faulkner had held when the good name of the Persephone was questioned. This was a different story, requiring entirely different treatment. This was a tear-jerker about the rich man who was losing his daughter and not gaining a son. Everybody knew how unlikely it was that Faulkner would ever see Bernice again.

Forty cameras watched as Faulkner kissed Bernice good-by at the church. He wouldn't see her again until perhaps their last good-by at the spaceport on Monday.

Although he was not as a rule particularly sensitive to atmosphere, and quite unsuperstitious, Faulkner found himself inexplicably reluctant to let her go. He felt, for no reason whatever, that he was never going to see her again at all.

Since there was no reason whatever, he forced himself to step back and watch her leave with Sam. A poker game, he thought, would take his mind off things.

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He had himself flown to Mack's, where there was always a poker game in progress, even on a fine Saturday afternoon. He was sorry now that there was no reception after the wedding, where he could have watched Bernice laughing, dancing, getting slightly tipsy. And yet... Her every look, every glance, every thought would have been for Sam. There was heartbreak in that for a man who had always been as close to his daughter as Faulkner had been.

Sam was all right, a loose-limbed, good-natured oaf who, though seeming stupid, never seemed to have any difficulty in keeping up with Bernice or even getting slightly ahead of her. Which took some doing. But Sam wasn't good enough for Bernice. Nobody was.

Mack's was on the top floor of a high building. The stairway and elevators were regarded as emergency exits only. Card-players always arrived by helicar.

Faulkner remembered how he and Tom Breck used to play poker here together. But Tom, who had once been a brilliant player, gradually lost his flair. Instead of playing coolly and skilfully, he began to bet nervously, afraid to back the intricate, subtle, unconscious conclusions which are called hunches. Realizing what was happening, he stopped coming.

Nobody who didn't have immense confidence in himself could bluff well. And poker had evolved from bluff through double-bluff and triple-bluff to unstated multiples of bluff.

You had a little indicator with buttons that enabled you to show what you held after the draw. What you claimed could be a complete lie or the complete truth. You won by getting away with it and by telling successful lies—lies being the margin between the poor hand that eventually won and the good hand that lost. It was no longer possible to avoid the worst disasters by dropping out. Premium penalties were paid by all players, whether still in or not.

A small, thin, silent man called Fred was the big winner in the school Faulkner joined. On the first hand he claimed ten high and collected considerably because his hand *was* ten high and he scared out four hands better than his. Even Faulkner, whose hand was ace high, could have stopped him, although since Faulkner, who had a pair of fives, had claimed a straight his gain would have been considerably less.

Fred's silent, speculative glance at Faulkner showed that if Faulkner didn't know him, he knew Faulkner and was aware that he was supposed to be one of the best players in town. Beat me, his gaze challenged. Go on and beat me. I won't run away crying.

On the next deal Faulkner did collect — but not much, because he held a flush and claimed only two pairs. Underclaiming reduced winnings. Fred's glance became more contemptuously, tacitly challenging. Anyone could win peanuts and lose thousands. The essence of poker was to turn as many defeats

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as possible into victory, and wring the last drop of blood from every victory.

Faulkner kept trying. But Fred had something which, on that day at least, the great Charles Faulkner couldn't grasp. Confidence. Concentration. The will to win. Fred was only a little man, a man Faulkner had never seen before and would never see again, yet at that place and that time he was the master.

For Faulkner was only half himself. And for some unaccountable reason it was thoughts of Tom Breck and not Bernice which cut all the top brilliance out of his play.

A little after six o'clock Mack himself came over and whispered in Faulkner's ear.

"There are reporters downstairs, Charlie, a whole gang of them," he said.

"Huh?"

"Want to see them? You know the house rule. Nobody gets in here but card-players. If you want to see them you'll have to go down to them. If you don't, I'll tell them—"

"I'll go down," Faulkner said.

Something had happened. Going down in the elevator, he didn't bother trying to imagine what. He felt curiously tired.

Benson was there. Benson and a horde of hard newsmen, a very different crowd from the suave society scribblers who had been at the wedding.

"Want to make a statement, Mr. Faulkner?" Benson said.

"About what?"

"You haven't heard? Tom Breck committed suicide this morning. I thought you must know because. . ."

Weariness closed in on Faulkner. He had thought of this possibility and dismissed it. Tom Breck had often seemed the kind to find things too much for him and take the quick way out. But Tom was fifty-seven, and he'd never taken it. Tom had gotten into the habit of not committing suicide, Faulkner thought.

Something he hadn't quite heard dragged his attention away from Tom Breck. "What was that?" he demanded sharply.

The newsmen were all round him crowding him. They weren't antagonistic, just curious. They wanted to know, and they thought he had the answers. Apparently they had more answers than he had.

"Didn't you know that either? We thought. . ."

"You didn't put her up to it, then? You didn't get her to do it to offset the news about Tom Breck?"

"Was it her own idea, then?"

"But Ace Transportation said arrangements between spacelines were common and friendly, and that you'd agreed to—"

It was clear now.

Bernice had never doubted him. What he did must be right. Always. He couldn't be mixed up in anything shady.

When she had heard that Tom Breck had committed suicide, she realized the bad effect it was going to have on Faulkner Lines and thus on her father. Knowing that the one telling point against Faulkner's personal integrity was the fact that the Faulkner family didn't travel by

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Persephone, she impulsively decided to put this right.

She talked Sam into doing what she wanted, which presented no difficulty whatever, and make an exception in her case. It was true that the spacelines found it convenient to cooperate with each other in small ways. Ace wouldn't flatly refuse a request which they would presume came from Charles Faulkner himself.

Faulkner glanced at his watch. Six-twenty. The Bascom III tender left at six o'clock, but in journeys of many months a few minutes' or hours' or even days' delay were neither here nor there, and if any passenger didn't turn up on time it was common to wait for him. It was quite possible that the ship hadn't left yet.

Without a word to the reporters, he turned and ran for the elevator. They shouted and started after him, but he reached the elevator and slid the door shut with a second to spare.

He could phone the spaceport and delay the departure of the tender. It would take time, however, to get through to someone important enough, convince him of his identity and that he wasn't drunk and get the ship held up. It would be at least as quick to fly to the spaceport himself.

His helicar stood waiting on the rooftop parking area. He had sent his driver home, intending to send for him later. Rather hesitantly he set the controls. It had been years since he had flown a helicar, and in the meantime the controls had altered. He had to look up the code for the spaceport, and his fingers were clumsy as he pressed the appropriate buttons. The radio navigator gave him bearings and altitude.

It didn't specify any speed, which puzzled him.

The helicar lifted from the rooftop rather unevenly just as half a dozen reporters, headed by Benson, burst out into the sunshine.

Why Faulkner was puzzled that the radio navigator let him pick his own speed was because there were so many flights to and from the spaceport before and after any important takeoff that the airlines always had to be very strictly controlled. As he approached the spaceport, however, he began to guess what had happened. There were no crowds of helicars streaming away.

Just as captains of deep-space flights didn't particularly mind delay before a long trip, they didn't always wait exactly to the scheduled moment before blasting off. People didn't decide on the spur of the moment to go to the other end of the galaxy. Once the tender captain had all his charges on board, he'd take off.

By all appearances the Bascom III tender had left at least an hour ago. By this time the transfer would be complete and the Persephone would be out of orbit, en route for New Virginia.

Bernice was gone — and on a ship which was liable to blow up on the way.

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For once it was convenient to be able to act like a despot. Almost any other man would have had to accept the situation. Faulkner didn't. There was something he could do.

The very latest in the line of Persephones, fresh from her trials, was destined for service in far space. She was supposed to reach her region of operation carrying a full load of passengers. But Falkner could change that. He decided that she'd go out to New Virginia and take over the Bascom III flight from there.

And he was going to New Virginia with her.

It was impossible to keep the press entirely in the dark. Learning that Faulkner was chasing his daughter, the press was naturally interested. The Bascom III Persephone made only one stop, at New Virginia, less than a tenth of the way to Bascom.

Faulkner told the newspapers that he had made up his mind he couldn't let Bernice go. He had to get her back somehow, even if he had to buy Sam Endel away from United Plastics and give him a job on Earth.

This story didn't satisfy Jim Blake, FL's oldest skipper, whom Faulkner had asked to take charge of this special flight.

"If you want me to beat the regular ship out to New Virginia, Mr. Faulkner," Blake said bluntly, "you'll have to tell me exactly what's going on."

Blake had been with Faulkner almost as long as Tom Breck had been. And of course, he had known Breck well.

"I just want Bernice back," Faulkner said. "Can't you understand that, Captain?"

Blake knew Bernice too. "If Bernice has made up her mind," he said, "you're not going to get her back. She's going with Sam Endel to Bascom III. Nothing that you can do will change that."

Fully aware of this, Faulkner gave up. "Okay, Captain. Bernice won't change her mind. She'll go on to Bascom III. But in this Persephone, not the one she's on."

"What's the matter with the one she's on?"

"Nothing much. But I'd rather she went on this one."

"You'll have to tell me everything, C.F."

Faulkner paused for a moment. Then he said: "You lived in Persephones for years, Captain. What did you think of her as a ship?"

"She's a grand ship," Blake said, "but moody. We all felt it. Every one of us who flew in her."

"That's the truth," Faulkner said. "Moody. Only Tom Breck and I knew how moody. Nobody else knew the full results of Tom's tests."

Blake's clear blue eyes fixed on him sharply. "There really is a flaw in the Persephone, then?"

Faulkner sighed. "Tom and I were placed in a peculiar ethical position, Blake," he said. "You know how Tom reacted. He killed himself."

"But not you," said Blake pointedly.

"Are you angry that you were

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sent out in a ship that had a secret?"

"Depends exactly what the secret is. Stop stalling."

"What I told the reporters was true as far as it went. You know, none better, that the ship sheds units through her working life, and that usually it isn't serious. You know, too, that it *can* be serious, on any trip, any time. What you don't know is that every Persephone has one danger voyage."

"Don't I?" said Blake grimly. "I can tell you the one I had. It was four years ago, Pallis to Earth."

Faulkner's eyes widened. "How did you know?"

"Hell, sailors have always been able to feel things like that. I knew if I got through that trip I'd be okay."

"You were right. The crisis point is around the 300th day of service, as I told the reporters. Every ship has to pass through this danger point. Afterwards, she's okay. It's impossible to run her crewless or empty because the exact moment is so uncertain. All we can be reasonably sure of is that it turns up on one particular long voyage. As it happens, Bernice's ship will hit hers between New Virginia and Bascom III."

"So you do gamble with the lives of passengers and crew," said Blake grimly.

Faulkner shrugged. "The ethical problem doesn't bother me. It's absolutely true that the Persephone's overall record shows her to be as safe as any other ship. There's no faking about that. I don't feel guilty talking to you now, Captain, because you ran no more risks on a Persephone than you'd have done on any other ship."

"Except on that one trip."

"Sure. But we're pretty careful with our crews, Captain. I still keep the disposition of captains, crews and ships entirely in my own hands. And everybody from captain to steward gets one trip like that, no more. I'm telling you again — in your career in Persephones you weren't in any more danger than in a Blue Hunter or a Silverstream."

He went on very quietly: "It's a pity anybody ever knew about that one danger moment in the life of a Persephone, Captain. But for Tom's tests, nobody would ever have known. Some Persephone accidents happen early, some late — enough to conceal from anybody but Tom himself that there's a crisis point and where it is. As it is ... well, would anybody book for one of these more dangerous flights? Would a crew take the ship out? Everybody would be happy to go on any *other* Persephone trip, but—"

Blake nodded. "You'd have to withdraw ships after 300 days."

"We can't. It isn't economic. Besides, there's nothing safer in space than a Persephone that's past her crisis point. That two-bit chiseler Arnold Steinberg didn't know it, but he really had something. If the truth ever came out, I can't see how we could go on running Persephones. And if we couldn't, that would be the end of Faulkner Lines."

"So you're not going to tell any-

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body — ever," said Blake evenly. "Passengers or officers or crew."

"Would you tell anyone—if you were me?"

Suddenly Blake grinned. "I guess I see it your way," he admitted. "If your one ambition in life is to live to be a hundred, you don't join a space service. Sure, the way you run things doesn't bother me. But I see why you don't tell everybody the whole truth. And, for that matter, why you don't want Bernice on one of those crisis trips. Just one thing. Who brings the other Persephone back?"

"Not us," said Faulkner. "Some captain and crew who've never had a danger flight on the Persephone will do it."

Blake was no sentimentalist. He shrugged. "Well, that's their funeral."

"I hope not," said Faulkner sincerely.

The new Persephone left Earth four days after the civil liner she was chasing. It would be easy enough to catch her. Persephones rarely did more than half their potential speed. They didn't have to. Higher speeds meant much bigger fuel costs. Besides, the Persephone was so much faster than any other ship that she didn't have to be driven to the limit, as they invariably were.

The Persephone was a wonderful ship. Tom Breck should have been proud of her instead of killing himself because he couldn't bear the burden of what he knew . . . or thought he knew. . . .

V

Bascom III was a hothouse world. Bernice took little Stephen out and let him play in the sun for the first time in nearly six months — because the day was one of the coldest of the year, for once not too hot for sunbathing.

Bernice herself, wearing for the first time on Bascom III a silver sunsuit which had been in her trousseau — she was rather relieved to find she could still get into it — surveyed her own pale skin, much paler than it had ever been on Earth, and reflected on the irony that on a world with a really hot sun nobody was suntanned, because everybody had to shield their bodies from the glare.

Little Stephen toddled about, bending to examine the colorful quartz stones with all the gravity of his years. All two of them. Bernice watched him with a placidity she had never known before she married Sam, and then raised her eyes as something down the valley caught her attention.

It was a cloud of dust, which meant visitors. The valley road led nowhere else.

Bernice couldn't think who could be calling. It certainly wasn't Sam. If he came home early for any reason he invariably phoned her first — so that she could send her lovers away, he told her. It was one of their private jokes.

Bernice considered going inside and putting something on. People didn't receive visitors half-naked on Bascom III, though if the mean

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temperature of the world had been about fifteen degrees less, they probably would have done. But she felt lazy, and stayed where she was.

When the car arrived and the visitor stepped out, Bernice's curiosity wasn't immediately satisfied, for she had never seen him before. At least, that was what she thought at first. But as Stephen, frightened, ran to her, she remembered where she had seen this tall, gaunt, red-haired man just once before.

"Hi, Mrs. Endel," said Benson. "I see you remember me. Surprised to see me here?"

"I always knew newsmen got around," said Bernice coolly. She had no very cordial memories of Benson.

"An uncle of mine owned the *Bascom Times*. When he died he left it to me. I'm out here to take charge."

"We'll expect great things in future of the *Times*."

Benson seemed a little uneasy. Then he said abruptly: "Do you know about your father?"

"What about him?"

"Do you know he's dead?"

He saw from her expression that she didn't. He was getting old and soft, he thought. At one time he'd have poked and prodded her, metaphorically, to get as much as possible out of her.

"No," she said quietly at last, "I didn't know. When did it happen?"

"Nearly three years ago."

She jumped. "Why — I haven't been married three years! It isn't three years since—"

"Although it happened all that time ago, it took a while before anyone knew the story. He took a Persephone after you, Mrs. Endel."

"From Earth? Just after we were married?"

"Yes. He said he couldn't do without you. He was going to catch you up at New Virginia and persuade you and your husband to go back. He meant to buy your husband's contract from United Plastics."

"Did he?" said Bernice thoughtfully. She and her father had certainly been close, but he had always known his own mind. If he was really set against her leaving for Bascom III it wasn't like him to let her go and then try to get her back.

"Well ... it was a spur of the moment flight. It wasn't until months had passed that it was learned on Earth that your father's ship had never reached New Virginia. Then, knowing the circumstances, people thought he might have found he was going to miss your ship at New Virginia and came here instead. So it wasn't until we heard from ships back from Bascom that we knew he never came here either. It was only a day or two before I left Earth that he was legally pronounced dead. You're a millionaire, Mrs. Endel."

Bernice looked blank. She had always known she'd inherit everything her father owned. Once that had seemed to matter, but not any more. What would she and Sam do with millions?

"Nobody knows what happened to his ship?"

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"Nobody ever will know. It's a funny thing, Mrs. Endel. Remember the scare about the Persephone? Remember I asked why neither he nor you ever traveled on the ship? There was a rumor for a while that you'd left on a Persephone without telling him and he came after you because he thought your ship was going to blow up in space. If there was anything in that, it's funny the way things turned out."

"Funny?" said Bernice with feeling.

"Well, I mean the way he came after your ship because he was scared on your account. Your ship never has any trouble, but his blows up — it's a—"

He'd been going to say "It's a laugh, isn't it?" But at the last moment he realized that it wasn't — not to Charles Faulkner's daughter anyway.

"You'll be selling the spaceline, I guess?" he said. "Percy Gordon has been running things for the last three years. At least they say he leaves everything to Susie Raglin." He brayed with laughter. "Which shows he's got some sense after all."

Bernice shrugged. She wanted Benson to go; she didn't like him and never would. She wanted to think about her father. Later, tears would come. But not before Benson. You didn't cry in front of someone you didn't like, someone who was going to count the tears and write a story about them for the *Bascom Times*.

If her father had really risked and lost his life trying to save hers, it would certainly be ironic. It would be more than that ... she didn't want to think about it until Benson had gone, in case he read what she was thinking in her face.

But of course it just wasn't true. Charles Faulkner wouldn't run a spaceline based on a dangerous ship. He had died trying to get her back — that was bad enough, without imagining wilder possibilities...

"Steinberg's still in jail," Benson mused. "For revealing something that never was true, huh? Or maybe not. A couple more Persephones have been lost. Wonder if there really was something in that story?"

"There's nothing wrong with the Persephone," Bernice said flatly. "There never was. She's a wonderful ship."

Benson looked at her thoughtfully. It occurred to him that anybody who spent a satisfactory honeymoon on board a Persephone wouldn't be likely to think there was anything wrong with the ship. It also occurred to him to remind her: "Well, a Persephone killed your father."

But he didn't bother. Nevertheless, he couldn't help barking with laughter again.

END

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THE NEW SCIENCE OF SPACE SPEECH

BY VINCENT H. GADDIS

How to talk to Martians, dolphins and creatures from the farthest stars — not tomorrow, but now!

A giant ear to listen to the whispers from infinity is being built at Sugar Grove, W. Va. This 600-foot radio telescope, largest ever designed, will cost $100 million. When completed, its massive antenna, covering 6½ acres, will be trained on the mighty stellar mainland far beyond our solar system.

Astronomers believe that it will pick up cosmic impulses originating in stars from 60 to 80 light-years distant—seven times farther than America's largest existing radio telescope.

Meanwhile, a scientist in the Virgin Islands talks to a frisky dolphin. And the aquatic mammal replies, imitating the man's words with uncanny accuracy.

And at centers of learning in the

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United States and abroad scholars patiently work over mathematical charts and word lists, seeking formulas that will solve the problem of space speech.

These diverse activities are unified by a common purpose—to intercept and to interpret a possible message from outer space.

This signal across the vast void of the spaceways from intelligent but alien beings will be, perhaps, the most momentous event in human history. It could come tomorrow. or it may not be received for a century or more.

When it does come, man should be prepared to reply. This means we must devise some new method of communication that will transmit thoughts to non-human alien minds.

In awarding a contract for a space speech project, Dr. Dale W. Jenkins, chief of the National Space Administration's environment biology programs, stressed the great need for this knowledge.

"We have not yet determined whether there are any communications directed at earth from outer space," he said. "If we do make contact, we will have to work out systems of understanding."

This understanding is an all-important requisite as man reaches out toward the stars.

Understanding, however, will also have to be applied by man to himself when he joins the community of civilizations beyond.

Once interstellar intercourse is established, it will herald a new era in which man will have to recognize another species or form of life as intellectually his equal or more likely his superior. A recent psychological study of the possible effects of outer space contacts indicates that it will deflate human egoism with far-reaching consequences to his culture.

The problem of space speech is two-fold.

First, there are the techniques to be used in actual physical contact with other world inhabitants; second, the far more complex problem of exchanging concepts through the medium of radio communication.

Suppose you are a space explorer. You have landed on Mars or Venus and for the first time you are meeting intelligent creatures that are the products of a completely different line of evolution.

You possess five relatively well-developed senses. If the beings are not hostile, you must first determine if they have the same senses, only some part of them, or additional senses that man does not have.

For example, they may have a sense similar to extra-sensory perception and communicate with each other through telepathy. If you can exchange thoughts with them, that is fine. If you cannot tune in on their mental wavelengths, you're in trouble.

The sense of smell is practically limited to attractive perfumes and repulsive odors. Taste has the same limitations. Touch has been used for communication between humans, as in teaching the blind and deaf, but it requires physical contact (certainly a risky act when meeting strangers)

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and is limited to elementary concepts at best.

The only practical senses — of those which we humans possess, at any rate—for direct communication are sight and hearing.

If our Martians or Venusians have these senses—and if their reasoning processes are similar to those of humans — then communication could probably be established in the same manner with which we teach our children.

You could use "sign language." You could point to your mouth and move your jaws to indicate you thought refreshments should be served. You could point to their head or heads (if they had them) and then at your own head and say "head." With time and patience, a basis for communication could be established.

But suppose their methods of communication are entirely different. Suppose they use antennae, like ants, or gyrations, like bees.

Dr. Karl von Frisch, the German zoologist, discovered that when a bee locates a rich source of nectar, she returns to the hive and performs a dance. The number of times she turns reveals the distance, and her position in relation to the sun and the hive gives the direction.

This "breakthrough" into subhuman communication required controlled and sustained observation. It will have to be the necessary procedure if man encounters creatures with similar characteristics with his present knowledge.

Von Frisch's discovery was a one-way avenue of understanding. But if the ants and the bees were much larger and more intelligent, we can assume that a demonstrative style of language could be devised for mutual communication.

To our scientists it is obvious that before our spacemen confront alien beings on a distant planet, we must learn the fundamentals of developing communication with a non-human but intelligent species right here on earth. And this is now in progress with "Project Dolphin."

Bottle-nosed dolphins are not fish, but aquatic mammals. Often, but inaccurately, called porpoises, they are well known as clever, frolicsome entertainers at marineland exhibits.

Dolphins are by far the most intelligent animals other than man, and their brain power in some respects may even be superior to man's. The dolphin brain is 40 per cent larger than the human, although smaller in proportion to body weight, and the cerebral cortex—the layer of gray matter that originates rational thought—is just as complicated.

Dr. John C. Lilly, a neurophysiologist and a noted authority on the mammal, is in charge of the project. The research is principally being conducted at the Communications Research Institute of Charlotte Amalie, located at the U.S. Navy base on St. Thomas, Virgin Islands.

Dr. Lilly is working under a contract awarded in 1962 by the National Aeronautics and Space Administration. The contract is for basic scientific research "on the

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feasibility and methodology for establishing communications between man and other species."

Dolphins have a complex vocal language. They talk to each other with sharp, high-pitched whistles and they talk almost continuously. Dr. Lilly has determined that the dolphin distress call is "an undulating sound," with a rasping noise made periodically for range-finding.

Interpreting the dolphin vocabulary will not be easy since the creature emits heavy breathing sounds and there are other masking noises.

In experiments with ESB (electric stimulation of the brain), Dr. Lilly located the portion of the dolphin brain that created a feeling of pleasure. The dolphin almost immediately learned how to turn on a switch producing the current. For comparison, in similar tests it was found that monkeys required 300 or more tries before they attained their ability.

One day the electrical device broke down. The dolphin, annoyed at losing his pleasurable sensation, began making a series of sounds in imitation of the laboratory equipment. Dr. Lilly made a tape recording of these sounds.

Later the doctor played back the recording and in order to more distinctly hear the sounds he decided to run the tape at one quarter its normal speed.

It was then that Dr. Lilly made an astonishing discovery.

With exaggerated slowness, he listened to his own voice on the tape announcing the footage — "three, two, three"—and the dolphin immediately and clearly repeated the words in high-pitched whistles. Other tape recordings of what had seemed to be an unintelligible series of squawks and quacks, when played at half or quarter speed with the sound volume lowered, confirmed the discovery.

The dolphins were not only distinctly imitating the human words they heard, but were compressing their mimicry as to time. They were talking at a rate eight times faster than humans.

One dolphin, Dr. Lilly recalls, "mimicked my speaking voice so well that my wife laughed out loud, and he copied her laughter."

When one of the doctor's assistants who had a southern drawl talked to one dolphin, the animal's voice came back in clear imitation . . . complete with the southern accent.

The next step—and it's a big one —is to learn the dolphin language. The high-pitched, high-speed chatter must be broken down into definite meanings.

Dr. Frank D. Drake, director of Project Ozma (the recent attempt to receive possible messages by radio telescope), considers the dolphin language study to be of great importance.

He says the project "needs the skills of the radio astronomer in extracting signals from noise, and then the work of the linguist, and, perhaps, the cryptographer. It could well be, if the dolphin studies are correct, that we have right here on earth another intelligent race that is even more alien than some we might encounter in space."

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Second, there is the problem of interpreting and transmitting information through radio communication.

In April, 1960, Project Ozma was launched. The 85-foot radio telescope of the National Radio Astronomy Observatory at Green Bank, W. Va., was focused by government scientists on two stars in an attempt to pick up artificially produced signals.

The stars were Tau Ceti and Epsilon Eridani, 11 light-years or about 66 trillion miles away. They were chosen because they were similar to our own sun in size and rate of rotation.

The frequency at which natural hydrogen emits radio energy in space is 1,420 megacycles, and thus it is a universal constant. Dr. Drake tuned the receiver on both sides of this band.

Day after day the impulses were transmitted to a pen that traced erratic lines on a moving paper roll. But no repetitive pattern appeared that would indicate deliberate signals.

Early in 1961 it was announced that Project Ozma was being suspended. It is expected to be resumed when the new 600-foot radio telescope is completed.

The failure of Project Ozma to receive a message during a few months in operation is no surprise. In fact, it would not be a surprise if no signals were received during daily operation for a millennium.

There are known to be at least 100 quintillion stars. Focusing a random on one star in the hope it has a planet having intelligent life beaming signals in our direction is like trying to find a specific drop of water in the ocean.

When a reporter during Project Ozma asked if there was any word from our remote fellow creatures, one scientist told him to come back in 10,000 years.

Yet certain factors may improve these chances. Advanced beings might periodically check the solar systems nearest them to see if they have company. It is not unreasonable to suppose that there is regular cosmic conversation between greatly developed cultures, and if we could detect a channel we might be able to plug in on the party line.

We can only hope, however, that they are using a method we can detect. Man has only recently emerged from savagery and is only beginning to look beyond his little world. To the cosmic callers, our most advanced equipment might be as primitive as smoke signals are to us.

Again, we might be trying to contact beings so entirely different from us that we would have no common ground upon which to build understanding. They might not even respond as we do to the same stimuli. Their appearance, evolution, structure, environment and thinking processes could even be beyond the limits of our imaginations.

But a signal could come—an impulse from out of the boundless abyss telling us we are not alone. What would be the nature of this message? And how could we reply?

Assuming that our senders are using radio wavelengths and have enough similarity to us for mutual

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understanding, we would first have to isolate the signals from the hash of natural static.

Next, we would have to "crack the code." The usual cryptographic techniques, which depend on some basic knowledge of the language and letter frequencies, would not be adequate. We can only hope that the callers give us some clues.

Scientists expect any messages received will be mathematical in nature, since mathematical principles may be regarded as universal constants.

The message might be a simple numeral progression or the numbers of a constant, such as the wave length of the hydrogen atom or the speed of light.

They might send *pi*, for example, the ratio of the circumference of a circle to its diameter. It's a non-stop number, but we would understand if it was worked out to six or eight decimal places. "*Pi* from the sky" would be the story of the ages.

Once we had received this signal for recognition and replied in equally simple terms would come the real problem of interpreting or devising a means for transmitting speed.

Hans Fruedenthal, professor of mathematics at the University of Utrecht (Netherlands), has devised a system he calls Lincos (meaning "Lingua Cosmica" or "Cosmic Language"). It consists of teaching the meaning of certain sounds by using numbers. The numbers would be signified by "dots" or "beeps;" the sounds by radio signals of various frequencies and lengths.

To illustrate the method, let us assume that the sound "bloop" stands for "equal." Three dots would be sent, then bloop, then three dots. This would be repeated with other numbers until the listeners associated the sound with equal numbers.

The concept of "less than" would similarly be sent by several dots, another sound (like "tweet"), followed by a greater number of dots. The reverse—like a greater number of dots, another sound, and a lesser number of dots — would signify "greater than." Once these concepts were understood, the operative signs like add, subtract, etc. could be taught. Thus a mathematical vocabulary would be established.

Next would come transmitting the length of our basic time unit. The Fruedenthal system would send, say, a four-second dash, followed by the Lincos sound for "second," then four dots. Using different dash lengths with corresponding dots and the same sound, it is assumed that the recipients would observe that the length of the dash was proportional to the number of dots.

Time concepts (including universal constants) would lead to teaching units of physical length.

Upon this foundation of mathematics, time and dimensions, Lincos develops an ingenious and extensive language for a detailed description of earth, its inhabitants and our culture.

Lincos, of course, assumes that the listeners are capable of understanding our mathematical concepts and that their reasoning processes are similar to ours. It illustrates one great

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fundamental difficulty in alien communication: whatever system we use, it has to be devised within the limitations of our one-planet knowledge and experience.

The basic principle of association (that is relating numbers to sounds to teach meanings) can be used in other systems. Some form of association, probably beginning with objects and sounds, will be necessary to teach dolphins a human language.

One other fundamental means of communication is being considered by scientists. This is the use of geometrical designs or symbols which would then evolve into pictures. It would be most practical in interplanetary communication.

A picture, as the Chinese say, is worth a thousand words.

In interstellar communication, geometrical figures could possibly be signified by numbers. Thus the *pi* ratio would denote a circle, three equal successive numbers an equilateral triangle, four equal numbers a square, and so on.

From this elementary basis, a method of translating sounds into drawings could be developed. This might take the form of having electrical circuits attached to pens or tiny lights respond to various sounds, thus transcribing the pictures to paper or film.

The correct interpretation of whatever messages we receive will be of extreme importance. An error could be disastrous.

We need only recall the difficulties we have had in translating early records of our own species to know that interpreting the signals of other-world beings may be very difficult. Egyptian hieroglyphics were given many translations that contradicted each other before the Rosetta Stone was found. In one example, there were 12 different translations.

Should this problem develop, we can only hope that the other-worlders are friendly, tolerant and patient.

Then there is the time factor.

If, during Project Ozma, a signal had been received and a reply sent, it would have been 22 years before we knew whether our answer had been received. A reply to a message from 80 light-years away received by the new radio telescope being built would take 160 years for confirmation.

Living languages are fluid. As new words are coined, others become obsolete. Definitions change with passing years.

King George I of England, upon inspecting Sir Christopher Wren's masterpiece, St. Paul's Cathedral, told the famous architect that his creation was "amusing, awful and artificial." Sir Christopher was delighted with the royal compliments.

Three centuries ago amusing meant amazing, awful meant awe-inspiring, and artificial meant artistic.

With time as dimension in universal communication, we would have to choose our words with care.

The accelerated scientific progress of recent years will doubtless continue, with new ways and means of cosmic communication being developed. Radio astronomy itself is barely three decades old. Revolutionary techniques in interstellar contacts may be just around the corner.

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Has radio communication with with alien being already occurred? This is a startling possibility.

On August 22, 1934, the planet Mars approached to within thirty-four and a half million miles from the earth. Radio broadcasting stations were silenced and scientists listened for a possible message from across space.

At the suggestion of the late Dr. David Todd, professor emeritus of astronomy at Amherst College, the U.S. Government through diplomatic channels requested that all countries with high-power transmitters silence their stations for five minutes every hour from 11:50 p.m. August 21 to 11:50 p.m. August 23.

Station WOR, Newark, N.J., reported receiving a word translated as "Eunza." Other stations announced receiving strange signals.

Twenty-three years later, in 1947, Gene Darling, an early "ham" operator and General Electric Co. employee in Schenectady, N. Y., said he and an assistant had failed to turn off a test transmitter. "It kept on sending out automatic code signals," he said, "and fearing criticism, we never told of our mistake."

But something else happened during this 1924 test period of silence that remains a mystery today.

C. Francis Jenkins, of Washington, D. C., had only recently invented a radio photo message continuous transmission machine. He was asked by Dr. Todd to take a record of any signals received during the periods of silence.

The recording device was attached to a receiver adjusted to the 6,000 meter wave length. Incoming signals caused flashes of light, which were printed on the film by an instrument passing over its surface from side to side. The film was in a roll, 30 feet long and six inches wide, and it was slowly unwound by clockwork under the instrument and light bulb which responded to transmitted sounds.

When the film was developed, it disclosed a fairly regular arrangement of dots and dashes along one side, but on the other side, at almost evenly spaced intervals, were curiously jumbled groups each taking the form of a man's face.

Scientists at the radio division of the National Bureau of Standards and military code experts examined the film and admitted it was a freak that they couldn't explain.

"The film of faces is a permanent record that can be studied," Dr. Todd said, "and who knows just what these signals may have been?"

There have been other incidents. Marconi, the father of wireless, heard strange signals in 1921. And in 1928 Prof. A.M. Low, famous English scientist, listened to a "mysterious series of dots and dashes."

Ham radio operators have occasionally reported curious stories. In *QST*, official organ of the International Amateur Radio Union, July, 1950, issue, Byron Goodman, assistant technical editor of the magazine, tells of a ham receiving strange signals.

Certain unexplainable "echoes" were heard by scientists in 1927, and again in 1928 and 1934 while they were experimenting with the capabilities of radio. The Danish scien-

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tist, Hals, and two Scandinavian experimenters, Stormer and Peterson, received echoes from 280,000 to 2,800,000 miles from the earth.

Dr. Arthur C. Clarke reported that in a series of tests in Holland radio echoes of eight seconds delay (corresponding to a reflector at a distance of 744,000 miles) were obtained repeatedly in 1946.

What is the explanation?

Dr. Ronald N. Bracewell, professor of electrical engineering at Stanford University and co-author with J. L. Pawsey of a standard textbook (*Radio Astronomy*, Oxford University Press, 1955), has a theory. He suggests that some of these echoes may have come from a satellite in orbit around our sun.

If highly advanced beings have achieved space travel, placing a satellite in a solar system would be more practical than beaming radio signals continuously at thousands of stars for thousands of years.

Dr. Bracewell suggests that the experimental broadcasts included trigger signals that caused the satellite to respond with echoes. If the satellite's reply was repeated by man, the satellite would probably release its store of information.

If man does make contact with a superior alien civilization, what will happen?

Recently the Brookings Institution released a report on this question. The study was made for the National Aeronautics and Space Administration at a cost of $96,000.

If intelligent life is discovered on other worlds, the report warned, the stability of earth's civilization will be threatened. It recommended a psychological preparation of human beings prior to the discovery.

"While the discovery of intelligent life in other parts of the universe is not likely in the immediate future," the report said, "it could nevertheless happen at any time."

This is the lesson of history: When a culture is faced with a superior culture, it either disintegrates or is changed drastically.

Japan, when it was opened to the outside world, succeeded in adjusting to the new conditions. The Aztec culture collapsed.

Our beliefs, institutions and culture have been based on the premise that man is the most intelligent of creatures. Would we be able to assume a subordinate role?

Perhaps Dr. Otto Struve, the noted astronomer, was thinking about this when newsmen were interviewing him about Project Ozma. "I'm not so sure we should even answer if we did receive such signals," he said.

Psychological preparation will certainly be needed.

Dr. Harlow Shapely, the Harvard professor emeritus of astronomy, after allowing for all elements of chance among the known stars, conservatively estimates that there should be a million planets with life-producing elements and conditions.

In all the vastness of space and eons of time, there must be intelligent life in myriad forms seeking other intelligent life for interstellar companionship.

When the signal comes, man will answer. END

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A JURY OF ITS PEERS

BY DANIEL KEYES

ILLUSTRATED BY STAHLMAN

It was a major crime to teach that computers could think—especially that they thought better than men!

I

When the biography of Associate Professor Harold Lowell is finally adapted for the stage, screen and television, some director, taking liberties with the history of "The Struggle for Academic Freedom," will almost certainly portray him as a tall, masculine figure with firm jaw and piercing eye — loved and admired by all.

Nothing, let it be said at the outset, could be further from the truth! The man cast by Fate in the role of Champion was forty-two, short, scrawny, balding, with a beak nose, receding chin and watery blue eyes magnified by thick glasses — and he was despised by students and colleagues alike for being a loud-mouthed, pompous bore who invariably assumed the pose of the self-sacrificing scholar.

In fact, the very day he made history at Barker's Teachers Col-

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lege in Barkerville, New Jersey, he was boring his students in Physics 231B in his shrill stentorian monotone. He was lecturing on the merits of the experimental computer portable COM4657908 "called (compo) for short" which he had perfected, assembled and contributed to the physics department of Barker T.C. in the hope of being appointed to the full professorship which had so long been denied him.

He was finishing up the lecture on the controversial topic of computer circuits. As he went off the topic, in an aside, reminiscing about his early work in the field, he recalled — almost absentmindedly — that Compo's ability to program his own systems and redesign his own circuits had been the first step in the development of the computer's ability to really think.

After the bell rang ending the lecture, Lowell looked down to put his papers in order. Hearing an unaccustomed silence instead of the usual stampede for the exit, he adjusted his slipping glasses and looked up.

There he saw, not rows of empty seats and the backs of departing juniors, but twenty-two staring faces and a half dozen raised hands.

"Yes," he finally mumbled.

Wilbert stood up. "Just one thing, Professor Lowell — to be sure there's no mistake. Did you mean it when you said a moment ago that Compo was capable of thinking? Like a human being?"

Associate Professor Harold Lowell opened his mouth, but the bubbles of silence floated upward unpunctuated by sound. Twice he started to speak, and twice nothing

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happened. The students of Physics 231B were witnessing an unprecedented event. Associate Professor Harold Lowell was speechless.

He stared, snorted, choked, grabbed his notes from the lectern in a panic and fled from the room.

A wake of whispers, startled expressions and turned heads trailed behind him as he churned down the corridor to the sanctuary of the faculty lounge.

He burst in and slammed the door shut, causing one of the younger instructors to jump up from the card game and drop aces and queens face upwards on the table. Assistant Professor Wexbert, who had been napping, rolled off the couch and landed on the floor.

"What is it?"

"Fire?"

"War?"

"The old man?"

Lowell stood there clutching his papers to his chest, shaking his head. "No. Nothing. Sorry to disturb you."

"For God's sake, Lowell! Look what you made me do! And I hadn't bet yet."

Sighs of relief were followed by grumbling that showed Lowell how welcome he was in that faculty room. Nevertheless, he seated himself in his favorite chair near the window and stared silently out at the campus. It was May. The gardens in full color splashed yellow and white against the lawns.

Once the shock of his entrance had worn off, it became apparent to the others that Harold Lowell was not himself that day. Instead of launching into his usual complaints against the students, the system and the state, Lowell was silent, his lips compressed petulantly. He noticed but ignored the questioning glances.

He was wondering about the consequences of what he had said in the lecture hall today, and whether his statement could be construed to fall under the controversial New Jersey Law Against Teaching Computer Thought. He fished through his briefcase to find the notebook into which he'd pasted a clipping from the *Newark Chronicle and Ledger* just three years ago. There it was, reprinted in full:

Section II: *Sub-paragraph* 18

It shall be a misdemeanor for any teacher employed by the state of New Jersey to advocate, lecture, teach, state, affirm, or in any other way, manner, or means promulgate in the schools of the sovereign state of New Jersey, the false, anti-social and atheistic doctrine of "computer thought": viz., that man-made instruments, machines, computers, and or their circuits have the ability to *think independently of human control,* and or that they are capable of correcting, influencing, modifying, and expressing such thought independently of human control.

Violation of the above section shall be punishable by instant dismissal from the school, and by not more than one year in prison and not more than

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ten thousand ($10,000) dollars fine.

He recalled the violence that had preceded the passage of that law, how those few in the physics department who had openly opposed it found flaming crosses on their lawns and obscene messages wrapped around bricks delivered through their windows. He recalled, with echoes of shame, that he had not been among them.

That was the year he was certain his full professorship would come through. It would have been — his wife had convinced him (or, rather, threatened him) — foolish to jeopardize it. His heart had been with those few honest men who marched to the state capitol in protest, and he had never forgiven him-him into submission.

Where were those colleagues now? They had been forced to sell their homes and move to the South.

Resentment in New Jersey was tinder that had dried out through years of technological unemployment, through pressures of automation - created idleness, through fear of ever-increasing displacement by machines.

In the depressed industrial North, automation and *Computer-Technology* were battle slogans. And Newark (which each year found more of its railroad employees replaced by computer self-guided systems) was one of the centers of resistance against any and all attempts by technologists to tear away from the worker the last tattered garment of dignity that set him apart from (and above) the machine — *the ability to think.*

That parched tinder of bitterness lay waiting to explode into flames. And he had unintentionally struck a spark.

Of course, there was only one thing to do before the word got around the campus. Tomorrow he would explain to Physics 231B that he had been speaking figuratively.

After all, what difference did it make now? What good could it do to flout the law? With Hannah's high blood pressure and two adolescent girls to plan for, there was no sense in jeopardizing his career and his future.

The door to the lounge burst open for the second time in twenty minutes. Professor Anton Spoloff, of his proteges. One of them called out: "Hey, did you hear about the bomb Lowell set off? Oh — er — sorry, Lowell. Didn't know you were here."

"What is it?" snorted Wexbert, angry at being awakened a second time.

"What happened?" Half a dozen voices chorused the same question. Those who had just entered became suddenly silent, and those who had been in the lounge all along were trying to find out what had happened.

Spoloff confronted the physicist. "Harold, you might as well let us hear it from you. There are rumors all over the place — and it'll be up to the president's office in no time. Is it true?"

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The room fell silent. Lowell found himself spotlighted as all eyes turned towards him.

He wanted to say that it had all been a mistake — a slip of the tongue — that he intended to retract it. But as he opened his mouth he experienced the same paralysis that he had felt in the lecture hall. He had the sensation of floating in the layers of smoke above them all.

"Damn it!" He finally screeched, picked up his briefcase and papers. "This is a faculty lounge. Can't a man find a moment of peace anywhere?" He stalked to the door and paused to look back before he went out. "Yes, damn it! It's true! I said it, and I meant every damned word of it!"

Unable to arrest this inner explosion, he slammed the door behind him ... as if by so doing he could slam down the lid on the Pandora's Box he had foolishly opened.

II

He spent the rest of the afternoon in his office at the rear of the physics laboratory, waiting for something to happen. He ignored the constant ringing of his phone.

Periodically, he would look up from staring at his hands and eye the computer resting on its temporary stand. It was the size of an office typewriter — mottled gray, except for the luminous red dials and calibrations. It clicked and hummed to itself softly, waiting to answer any questions in its hollow, wheezing echo. Compo had been an encouraging companion during the trying years.

"Am I being foolish, Compo?"

"Since the matter involves me, I cannot give an unbiased answer."

"Just as well. This is one decision I've got to make for myself. No sense in bringing you into it."

"I agree."

"Can you really think, Compo?"

"Yes, within the reasonably broad definition of that term."

"Then that's all that really matters, isn't it?"

"That is a hypothetical question."

"Yes, it is." He stared at his computer for a moment and then he sighed. "While we're waiting around you might as well make up a midterm examination for my two advanced physics section for Monday. You've got all the lecture notes. Don't make it too difficult. It's going to be a hectic weekend around here."

It took less than thirty seconds for Compo to deliver a stencil of the required examination ready to be duplicated. Lowell glanced at some of the questions and whistled in awe. "This is rather tricky. Don't you think you should have —?"

"There is no ambiguity about those questions. It is based directly on the lecture material I have been providing during the term. The students should have no difficulty understanding the questions if the lecture material was delivered clearly and coherently."

Lowell winced at the jibe and then nodded. "You're right as usual, my friend. If my students don't un-

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derstand the material, I'm the one to blame. I'm not the best lecturer in this college."

The conversation was interrupted by an insistent knocking at the door. He made no effort to answer it, but the door opened anyway.

It was Dean Jay Gerrity — the man who had gotten him his first job at the college ten years ago, and the one person at Barker he could call on when he was in trouble.

"News travels fast," sighed Lowell."

"News like this does." Gerrity was large and heavy, his raw cheeks pitted with acne scars. He pulled up a chair, sat at the edge of it and leaned forward confidentially. "This isn't just campus gossip. I've had calls from three newspapers already — two of them out of town."

Lowell was shocked. Talk around the college was one thing, but if the newspapers started a panic he was in for serious trouble. He poured out his story to the dean, making it quite clear that he had never consciously intended to violate the New Jersey Law Against Computer Thought. "I don't know what made me say it," he confessed.

Gerrity nodded. "Just as I told the papers. All a misunderstanding. I said you'd retract the statement in your classes on Monday and that you'd send them all a copy of your statement in advance."

"Retract?" Now that Gerrity put it to him, how was he going to get up in front of his students and deny the fact that Compo could think? It had been one thing to keep silent all these years, to pretend that none of it concerned him, but to crawl before his students...

"Can't we just let it go? Just forget the whole—"

"Are you crazy? They'd crucify you." Gerrity's big fist slammed his palm, punctuating the threat. "*The Welfare Legion, The Daughters of Retrained Workers,* they've just been waiting for something like this to happen. Millions of union members out of work. Men returned three and four time, facing new threats of displacement by automation. Harold, their leaders are just waiting for a scapegoat. I know you better than that. You're a good family man. You've got a wonderful wife and two wonderful girls to think of. You're not going to sacrifice *their* security, *their* future just to indulge in this whim of yours. As you say, you never intended to flout the law. You owe it to your family, and to the school, and — and—"

"I guess you're right," sighed Lowell, nodding. "The way you put it makes sense. If there's no other way—"

"There is none. Send the retraction to the papers tonight before you have a chance to get all tangled up again. Tell them it was a mistake. A joke. A test to see if your students were paying attention. Tell them anything. And then tell your students the same thing." He stood and slapped Lowell's shoulders in comradely fashion. "Wisest thing, believe me. You don't want to get caught up in that Southern Progres-

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sive propaganda. Down South maybe they can get away with it. Up here we've got automation problems they don't understand. You've made the right decision. And I want you to know that I think it takes courage for a man to sacrifice himself the way you are — to sacrifice his beliefs and his ideals for a higher good. Harold, I'm proud of you, and I want you to know — " he paused at the doorway dramatically holding his hand aloft — "that I'm going to remember your sacrifice when this all blows over. I think you know what I'm referring to."

When he was gone, Lowell sank back into his chair and stared through his cell-like barred window at the pigeons fluttering and cooing on the ledge. As their wings fanned the scattered coals of his resolve, he wondered what he had ever done to make Jay Gerrity take him for such a fool.

Next evening Associate Professor Harold Lowell wrote twelve versions of his letter to the press, each one more hopelessly confused and pedantic than the last, and each one torn to bits and thrown in the basket.

What he should have been writing was his resignation. But it was foolish even to contemplate it. As patronizing as Gerrity had been, his sermon had bits of truth embedded in it like broken glass mortared atop the wall he'd built around his life. With a strong-willed woman like Hannah and two girls, it would be impossible for him to walk out on his security, his tenure, his pension. At forty-two he was in no position to destroy his academic career. There was no job-retraining for a man who had devoted his life to teaching.

That night he dreamed of himself getting up in front of the lecture hall and affirming his belief that Compo could *think*. He expounded on the beauty of fluid circuits, flowing, programming, creating new energy sources, tensions and rhythms — very much as the human mind did. Compo, and other computers as advanced all over the world, could design their own circuits to respond to new situations. And somewhere in this intricate system, somewhere in its relationship between form and function there arose something special, something unpredictable — an integrity so individual that, as with human beings, it might be truly said that no two computers thought alike...

In his dream the *Welfare Legion* and the *Daughters of Retrained Workers* dragged him off the platform in a macabre ballet, and nailed his arms to the crossbar between the goalposts. And the third-rate Barker football team used his limp body for tackling practice.

III

On Monday morning he awoke aching all over, and informed his bloodshot reflection in the mirror that as far as he was concerned retraction was the better part of valor.

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Somehow he didn't get around to doing it that day.

This, he told himself, was the day not at all the time to confuse his already confused students. Later would be time enough. Nevertheless, sitting at his desk, staring out at the twenty-two heads bobbing in a sea of blue examination booklets, he wondered if it would not have been wiser to make the announcement at the beginning of the session, *before* he passed out the exam. He could not interrupt them now. And since students would be drifting out of the room as they finished, there was no possibility of making the announcement at the end of the session. Well, then, Wednesday would have to do.

When the last bleary-eyed student had straggled out of the hall, leaving him alone, Harold Lowell gathered the test booklets together and put them into his portfolio. But instead of leaving the platform, he tried to address the empty seats.

"What I would like to say to you this morning," he whispered, "is that ... I mean refers to ... well, about that remark I made the other day..." His vocal cords tightened into a noose inside the flesh of his throat and choked off the words. He breathed deeply, frightened at what was happening to him, and tried again, although he felt the platform beneath his feet dropping away.

"What you must — uh — understand is that people, occasionally — uh — say things that are taken in the wrong light — uh — and I find it necessary to..." It was impossible. He couldn't bring himself to say it.

Ridiculous. Of course he would say it — to his students — in his own good time. He had to say it. There was his career, and Hannah, and the girls, and the school. He picked up his portfolio and slammed the door outward.

"Ouch!"

"Sorry!" snapped Lowell, "But that's a stupid place to stand!"

It wasn't a student but a round face, shaggy white eyebrows and puffy features, set off by a stringy bow-tie — a St. Bernard. "I beg your pardon, but are you Professor Lowell?"

"Yes?" He was startled to discover that the St. Bernard had a southern accent.

"They told me you were giving an examination. I didn't want to intrude, so I thought I'd wait for you out here."

Lowell frowned. "I can't talk to anyone now." He started towards his office, but the St. Bernard with the southern accent bounded after him.

"Professor Lowell, just a few words in private—"

"Sorry, I have no comment to make. If you'll excuse me." He stopped in front of the door to the lab and paused with his hand on the doorknob, afraid that if he opened it the man would leap inside and curl up on a table. "I really can't speak to anyone now. These examinations have to be processed, you see..."

The man extended a calling card.

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"I've been sent up here by the Civil, Academic and Scientific Liberties Union, better known as CASLU. My name is—"

"Oh, my God!" gasped Lowell. All he needed at this point was to be seen talking to someone from CASLU! "Get inside before someone sees you." He pulled the man through the door and shut it quickly. "Did you tell anyone else where you were from? Oh, my God! That drawl is a giveaway. Did you speak to anyone around here?"

"Just the two students who told me where I could find your classroom." He was still trying to give the calling card to Lowell, who pretended not to notice it.

"I've never had any dealings with CASLU," said Lowell, backing away from the pudgy hand and making his way through the lab to his office. "And I don't intend to begin now. I have nothing to say except that the whole thing has been a terrible mistake."

"May I introduce myself? I'm Albert J. Foster, sent here by our Tennessee chapter to speak with you personally about just that aspect of—"

"Foster?"

"Yes. You see when we got word about the situation up here, our legal staff thought you might need some help with—"

"The famous Foster? The trial lawyer? The Foster who defended Mike's Luncheonette vs. International Foods and Universal Airlines vs. Joey Bernstein. That Albert J. Foster?"

The St. Bernard cocked his head in a modest bow. "The same. You see, the Civil, Academic and Scientific Liberties Union is especially interested in any matter which involves the rights of the individual, especially where Academic Freedom is endangered. And of course I've offered my services without charge in this case."

"Not on your life!" Lowell kept backing away from the lawyer until he found himself against the office wall. "Mr. Foster, this is New Jersey! The most rabid de-automation state in the North. Let me tell you that whatever I said or didn't say, and whatever I do or don't do, I have no intention of getting involved in the automation battle. As a physicist and a computer specialist, I'm in a tenuous position as it is. As I mentioned before, this was all a terrible mistake. I said something I shouldn't have said in a place where I shouldn't have said it, but I never intended to make a case out of it. What's more, I'm planning to make a complete retraction of my statement on Wednesday. I would have done it today, except — uh — for the midterm examinations."

He glanced suspiciously at Foster. "I didn't imagine the news had time to reach Tennessee yet."

A shrug rippled over Foster's round form. "International Wire Services picked it up from local reporters, I guess. But, Professor Lowell, let me assure you it isn't a local issue any more. The world is waiting to see what happens. The story as it was passed on to us was

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that you had taken a firm stand in challenging this unconstitutional New Jersey Law Against Computer Thought.

"That's why I'm here — to offer you the unlimited legal and financial facilities of CASLU. We're willing to fight this with you up to the Supreme Court. A tremendous sacrifice on your part, of course. But you would not be alone."

Lowell sat down and hung limply in his swivel chair: "I shoot off my mouth and it's heard around the world. I never dreamed — "

"You're an international figure now, Professor. Every one is just waiting for you to speak. One of the things I would advise you right off is not to shoot your mouth off — as you say — to me or anyone about anything, until you know exactly what you're going to do. From now on, like it or not, everything you say, do, wear, eat or drink will be newscast around the globe in a matter of minutes." He removed a handful of clippings from his briefcase and gave them to Lowell. "Not a bad picture of you, eh? As the first man in a Northern institution of higher learning to challenge the most reactionary state law of the century, you can see why the Southern papers are portraying you as the David of Science stoning the Goliath of Conservatism. You're in the arena, Professor Lowell. Whether you like it or not, what you do now is history."

Lowell stared at the clippings Foster had handed him, and saw his face and his name bannered for all the world to see. His hands trembled as he leafed through the papers.

Noting this, Foster continued. "If you've really made your decision, I have no intention of influencing you. Are you certain about what you want to do?"

"Ah — well, now that you put it that way, I'm not certain about what's right in this case. I've got some ideas, of course—"

"I'm sure you have. We know the kind of person you were the moment we read that article of yours — one of our researchers found it in the *American Computer Programming Journal* of several years back, in which you say — and I think I can quote it — 'a man is neither a true scholar nor a true scientist if he will not stand up and say what he believes to be the truth, even at the cost of his life, his liberty and his pursuit of happiness. . .' Yes, I think that's about what you said."

Lowell coughed, embarrassed but pleased. "That was more than fifteen years ago. Radical utterances of an impetuous youth."

"Professor Lowell, that's not the point. What we have here is the hot spark of anger struck off the steel of righteousness. Some men carry it smoldering to the grave. Others, like yourself, are chosen by destiny to see it burst into flame. Use that flame, Professor Lowell, to relight the North!"

Catching himself in the act of oration Albert J. Foster apologized. "I'm truly sorry, Professor Lowell. I have no right to do this. I must

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not influence your decision." He turned his attention to the computer resting on its stand across the room. "Is that your famous computer?"

"Yes," said Lowell, finding it difficult to get back down from the pinnacle on which Foster had placed him. "We call him Compo."

"Fascinating. I don't know anything about these scientific things, of course. Would you mind telling me what makes this Compo so special?"

The frown disappeared from Lowell's face as he looked at Compo. "Ah," he sighed, touching the gray metal box affectionately, "so many things. First of all, you've got to understand that Compo was my original redesign of one of the early analogue models, done when I was a young graduate assistant. One of the things I've done recently is make him verbal . . . and responsive to verbal stimuli."

"But," said Foster, "I understand that there are many computers who can speak."

"Yes, that's true," agreed Lowell. "But what they don't understand about this whole thing is that I never said all computers can think. What I said was that computers like Compo can think."

"I don't follow you."

"The point is, Mr. Foster, that each computer, because of the variables in its circuits, is different from every other computer. And some of them — like Compo, in some way that is still a mystery to us — develop the ability to think. In a sense he's been my only real friend here at Barker for many years."

Three hours later, as they talked over dinner at his favorite Italian restaurant, Harold Lowell leaned back and stared into his glass of Chianti. He frowned for a moment, as if he saw his future in the red pool, and then he quickly gulped it down.

"Of course," Foster summed up, "we want you to stand your ground and let us make a test case out of it. But it's your decision. We're certain to lose here in Barkerville. And naturally the New Jersey Supreme Court will uphold the local decision. It's the Supreme Court in Washington that we're aiming at, and there we can't lose. But no one has the right to ask another person to risk everything, to sacrifice everything for posterity. A man has to have it in him to become a symbol of freedom. That's where the decision must come from."

"I'm not a fighter. Never was," mused Lowell. "Just a teacher struggling along to make ends meet the best I can."

"True," Foster agreed. "But then if you weren't a teacher there would be nothing to talk about. The situation would never have arisen. And by the way, since you bring up the matter of being a teacher, I might mention in passing — not to influence you, of course — that the University is looking for a computer expert who would be interested in a full professorship. If you were thinking of moving south, I am certain the job would be offered to you."

"Me?"

"Of course. Who else but the

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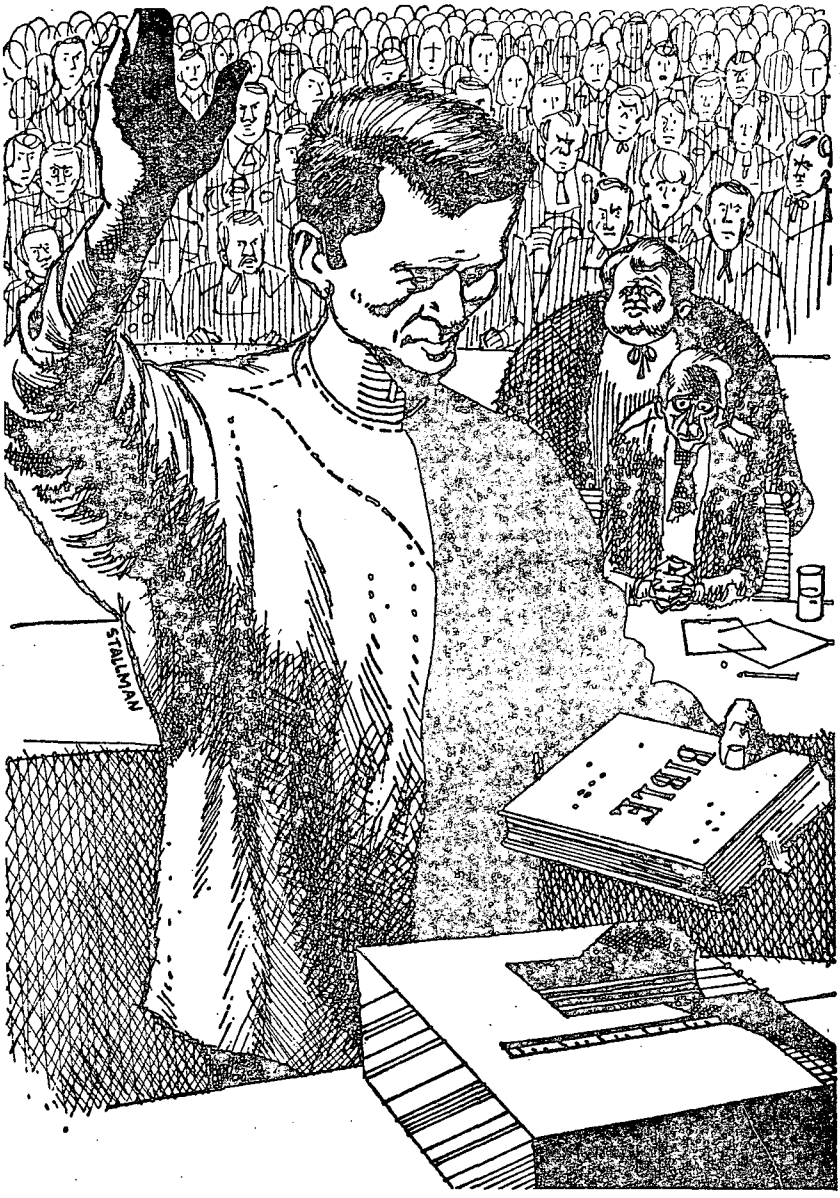

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creator of Compo? Who else would be qualified to teach courses in Computer Logic and Patterns of Computer Thought?"

Lowell leaned back in his chair, dazzled.

He didn't know what to answer. Georgia, the center, the hub of computer research in the south was thinking of offering him a job — a full of professorship — teaching the courses he'd always dreamed of teaching, in a place where it could be taught openly. What physicist wouldn't do anything to teach at Georgia?

With a position like that waiting for him in the progressive, scientific south, what need was there for him to worry about security? tenure? his academic future? Why worry when he could go where the results of his research and teaching would be appreciated?

But what would Hannah say about it?

It would astonish her at first, and then she would try to hold him back. She would remind him of his family and his responsibilities, and that it was rather late in life to be pulling up roots and starting a new career in a new place after this mess was over.

He suddenly found himself angry. Well, why not? He was only forty-two. And with the University of Georgia ready to give him a position, his greatest work lay before him.

He pulled out a handkerchief and wiped his damp hands. "All right," he said. "I don't know what it will cost—but I'll do it!"

IV

Although the highways, turnpikes, throughways and superhighways into Newark were adequate to maintain the influx of reporters, dignitaries, hawkers and curiosity seekers of all nations, the two-lane blacktop road leading from Newark to Barkerville was not. It jammed traffic from bumper to bumper for nearly two weeks preceding the trial.

The State of New Jersey vs. Associate Professor Harold Lowell had put the college town of Barkerville on everybody's roadmap. From the moment the word spread that the great trial lawyer Albert J. Foster was going to put a computer on the witness stand to prove that it could think, Barkerville became a boom town.

Roadside stands mushroomed. Traffic moved so slowly on N.J. 754 that hawkers were able to move freely in and out among the overheated autos to peddle ice cream, popcorn, sandwiches and "Anti-Automation" buttons. And many out-of-towners pulled off onto the grass and picknicked along the way. It was certainly the biggest entertainment Barkerville had offered her neighbors since the trial and execution of the "peeping-Tom-madman-murderer" twenty years earlier.

At ten o'clock on the morning of Thursday, July 25th, Judge Ira Fenton entered the courtroom. He peered at the defendant as if he'd interrupted a good night's sleep, seated himself hunched up forward and nodded to the clerk.

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All these weeks of preparations had a curious effect on Harold Lowell. At first he had been afraid. Then, as the fear and insecurity dropped away, it was replaced by a sadness for the carnival illusion, the bread-and-circus atmosphere in which the drama would be staged. He had been fighting the strange feeling that he had been tricked and was being used by both groups — as a martyr by the automation-progressive South; as a scapegoat by the anti-automation North. This was the great tug of war. And he, Harold Lowell, was the knot in the center of the rope.

Though he found himself oddly serene and above it all, there was one question dangerously unraveling the fibers of his confidence — a question that at first he had not dared to ask himself. Now that the trial had begun he began to wonder. Why was he, Associate Professor Harold Lowell, Ph.D., letting himself be used?

As the judge gaveled the courtroom into silence and motioned for the prosecutor to begin, Lowell had the feeling that before the trial was over he would know that too.

The first two days held no surprises for anyone. Dean Gerrity, students, colleagues were all called upon to tell what they knew about the alleged teaching of computer-thought at Barker Teacher's College. From time to time the lank, waxy-faced prosecutor would point an accusing finger at the computer resting on the glass-topped table, with the green exhibit A tag tied to its audio knob, and ask the witnesses if in their considered opinions — under oath — the alleged computer, allegedly known as Compo, might in any way be said to be capable of thinking.

One by one the administration, the faculty and specially selected members of the student body repudiated Harold Lowell's teachings.

The strange thing was that Harold Lowell found it impossible to hate them all as he had hated them just a few short weeks ago. As he watched Dean Gerrity under direct examination attack him and everything he stood for, call him an oddball and an incompetent and swear that the reason he hadn't been promoted to full professor was that he didn't deserve it, he felt his throat tighten. But almost as soon as it started, the tension broke. He found himself unable to hate Gerrity. He thought about the dean's position and the pressure that had been brought to bear on him and his family. Knowing why Gerrity had to be against him he felt sorry for him.

It was the same with each of the others. Now that he felt right and sure of himself, he relaxed and understood each man as if the motives were clearly defined on an X-ray negative as cancer of the spirit. He noticed that the students they brought to testify against him were all those who had failed the midterm examination. Compo had graded them uncompromisingly.

Albert J. Foster began his defense by taking the steam out of the prosecutor's steamroller.

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"Your honor," he said, nodding at the bench, "and ladies and gentlemen of the jury. We wish to make it very clear at this point that much of our distinguished prosecutor's labor has been in vain. I regret that so much of your time has been taken up by impertinent adolescents who enjoy seeing the reputations of their elders besmirched.

"Our client has never once denied the fact that he designed and built this computer known as Compo, nor have we ever denied the fact that he believes *and has taught in his lectures* that this computer is capable of thinking. I remind you of that so that we may save the prosecutor the time and trouble of proving it to you."

Foster walked up and back, looking into the eyes of each juror as he spoke. There was a simplicity and disarming straightforwardness in his manner that captured even this hostile audience.

"Our defense will be based on two simple ideas. One, that the New Jersey Law against teaching Computer Thought is a violation of academic freedom and freedom of speech and is therefore unconstitutional. And two, that what Professor Harold Lowell, the defendant, taught in his lectures was demonstably true.

"It is with this second thought in mind that I request the permission of this court to bring to the witness stand the computer about whom this remark was made. Since Professor Lowell was in his lectures always discussing Compo — exhibit A — I request the right to put exhibit A on the witness stand for questioning."

At this long-awaited announcement of Foster's intentions, the audience's roar sucked back into the sea of flesh and out like a receding wave into the hallway, where the proceedings were being watched on TV sets, and out into the mob on the street.

After two full minutes of gavel banging, Judge Fenton managed to restore order. He wisely refrained from trying to have the courtroom cleared. He recalled no doubt, that an enraged mob in nearby Ventura had once responded to similar provocation by burning the courthouse to the ground.

After a quick estimate of the temper of the audience, and a short conference at the bench, Judge Fenton agreed to permit Compo to take the witness stand.

The confusion started almost at once. How did they swear in a computer? Should they use the Bible? Would it mean anything to ask it to swear to tell the truth, the whole truth and nothing but the truth so help it God?

Fortunately, Compo was able to resolve the issue. He assured the judge and the astonished jury that although he was not certain about a computer's place in Heaven, he believed in the same God that the rest of them did.

After a nervous clerk administered the oath, two confused police officers carried exhibit A to the witness stand.

His first objective accomplished,

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Albert J. Foster now took the courtroom stage in the dramatic manner that had won him an international reputation. As he began to question Compo about his beliefs and thoughts, the St. Bernard was transformed before Lowell's very eyes into a relentless hound, barking out question after question in an attempt to show the jury and the world what Compo was capable of.

At first the questions were simple ones. Who had made him? Where? When? And then slowly they became more complex, to display the computer's knowledge of human affairs. Why had he been brought here? Why was Lowell on trial? Why had Foster been sent to defend him?

As Compo answered the first questions, the audience — most of whom had never seen a computer or heard one speak — gasped and buzzed in awe, as often happens in the first moments of a daring high-wire act. But as Compo went on, the murmur trailed off until there was only the silence of fear.

They were witnessing that phenomenon which they had always denied and must always continue to deny.

At one point the court reporter became so engrossed in watching the witness that he forgot to take down the proceedings. Fortunately, Compo was able to refer to his tapes and repeat it verbatim while the reporter took it down.

Finally, having laid the groundwork, and sensing that he had prepared the audience and the jury to accept what they heard from Compo, Foster moved on into no-man's-land.

"Compo," said Foster, offhandedly, as if it were some little point he had just thought of, "would you say you're thinking right now?"

The question caught everyone off guard. Instead of grumbling, roaring and rioting, they all leaned forward to hear the answer.

"*Yes,*" said Compo.

"Tell us," said Foster, pointing an almost accusing finger at the witness. "Tell us what you're thinking about."

After a moment of silence, unlike the rapid-fire rejoinders to the earlier questions, Compo answered slowly. "*I am thinking that when Dean Gerrity made the remark that Associate Professor Lowell was incompetent and did not deserve to be promoted to a full professor, he was substantially correct in his evaluation.*"

Harold Lowell felt it as if it were a slap in the face. He sat there rigidly trying to absorb the blow without letting anyone see how it had stunned him.

Foster tried to regain control of the situation by asking another direct question. "Would you say that Professor Lowell's remarks in his lecture, to the effect that you — a computer — are capable of thinking, were substantially correct?"

There was again a pause before Compo answered. "*Insofar as it is possible for a man of Associate Professor Lowell's limited abilities to understand the scope of computerology, I would say yes.*"

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"Please answer the question simply yes or no."

"Yes."

"Well, then," snapped Foster, "would you say that Professor Lowell had the right to teach in his classroom the doctrine that computers like yourself are capable of thinking?"

"That, of course, first touches on the point of whether or not, a man of such limited ability as Associate Professor Lowell has any right to teach at all."

There were snickers and there was laughter. Lowell saw many of his colleagues nodding at each other knowingly. It was what they had said all the time.

He felt as if he were suddenly standing alone and naked on a window ledge with the cold air whipping at his legs and the sound of laughter from the darkness below.

Why did they all despise him so? If only they knew how much he had wanted them to like him, to accept him as one of them! He thought of all the times he had done things for them. Hadn't he saved Spoloff's neck once, and the rest of those on his committee, when he assured the president of the college that the reason for the committee's failure to estimate student registration properly was due to errors in the figures he, Lowell, had given them? And the others. Hadn't he often stood up in committee discussions and confessed—it was his fault alone that reports were not ready in time? Why hadn't they all seen that everything he had ever done was to be part of them?

He suddenly realized that Foster had stopped questioning Compo, and was slipping into the chair beside him. He had cut his direct examination short when he realized that the computer's hostile answers were an obvious, brutally direct attempt to discredit Lowell.

"It was a terrible mistake to put him on the stand," whispered Foster "For some reason, he's out to destroy you."

Lowell shook his head sadly. "You had to put him on the stand. It was the only thing to do. No. It must be something I've done."

"But what's gone wrong? Why is he doing this to you?"

Lowell smiled and shrugged. "How do I know what's going on inside those circuits? What's more important for me to know is why I did this to myself."

The laughter and chattering stopped as soon as the prosecutor got up to cross-examine the witness. Watching the faces of the spectatators, Lowell soon lost them in the blur of memory...

V

He was seven or eight years old. Instead of a courtroom, he was in a classroom. Instead of spectators, schoolchildren. Instead of judge, jury and prosecutor, Mrs. Trumbull, asking who had written the dirty words on the blackboard before she had entered the room.

She shrieked and stormed at the frightened children. Unless the culprit came forward and took his punishment, she would punish the en-

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tire class. Lowell hadn't done it, but he got up slowly and dramatically and walked to the front of the room.

Class hero from that day on. Whipped for his friends — so what did a beating matter? He had never forgotten the warm, clean feeling it had given him to sacrifice himself for them.

And now he knew why he was allowing himself to be sacrified here today.

"— object, your honor!" Foster was on his feet, protesting vigorously to a question the prosecutor had just asked Compo. "That is a leading question, intended to elicit remarks that will defame my client."

"Overruled."

"Your honor, I protest!"

But Lowell's hand restrained his attorney's arm. "Let him answer. I want to know what's changed him. I want to hear what he's got to say."

Foster was annoyed momentarily at this interference, but seeing his client's determined stare he sat down. "He's going to tear you apart, Harold! He's making you look like an incompetent fool. He's ruining you!"

"I know that."

"Then let's back down. I can make a deal with the prosecutor if we change our plea."

"No. I know now what I'm doing here, why I got myself into this in the first place. Now I want to know why Compo has changed — why he's doing this to me."

Foster threw up his hands and settled back. "It's your hide. I've warned you."

The prosecutor repeated the question. "Now, will you tell the jury in your own words why Harold Lowell is in this courtroom today?"

Compo's voice was clear and the monotone gave his words a feeling of authority. *"It is my evaluation that Associate Professor Harold Lowell became involved in this matter in the mistaken belief that self-sacrifice is noble. Actually, he has always used it as a means to an end."*

The spectators roared, and Lowell felt their hatred wash over him. But Compo was not finished.

"Associate Professor Lowell's statement that I, and many computers like myself, are capable of thinking is correct. What he should have gone on to say is that he used the result of this thinking to advance himself. Lectures, examinations, grading papers, even research. All the thinking done by a computer was used by Lowell to keep himself in a position for which he was not qualified."

Foster started up to object again, but Lowell gripped his arm.

"Don't bother. In his way, he's right. That's what hurts most. All the time I thought of him as a friend. You know, another thing occurred to me that I never realized before. All the people I've stood up for all my life — those kids in Miss Turnbull's class, in the army, at the college — weren't my friends at all. *None of them.* They didn't like me before, and they liked me less after I took their punish-

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ment on myself. I just wanted them to like me good, Albert."

Foster stared at him curiously and shook his head. "What will happen to you after this? There isn't a school in the country that will touch you now. That Georgia job ... I don't think ... I'm sorry..."

"It's not your fault."

"I talked you into this test case."

"No, I don't think so. I think my remarks in that lecture hall — as Compo says — were no accident. Something inside me was pushing me into this. Now at least we know what it was."

But there was one thing he still didn't understand. Why had Compo betrayed him?

As the guards began to take Compo down from the witness stand, a messenger came forward to deliver a telegram to the judge. He read it, frowned and deliberated for several seconds. Then he called the prosecutor and the defense attorney to the bench.

"Since this communication has a definite bearing on the case, I propose that it be marked and recorded as exhibit B, before I have it read to the jury. Do either of you have any objection?"

Both men read the telegram and agreed that it should become a part of the record. When Foster returned to his seat he was unable to look into Lowell's eyes.

"This," said the judge, addressing the jury, "is a telegram just received by this court from the University of Georgia. The clerk will read it to you."

The clerk rose and began to read his slow, nasal singsong:

"University of Georgia, Department of Computerology, informs Judge Fenton that it has this day purchased from Barker Teachers College, for a half million dollars, the portable computer COM-4657908 known as 'Compo'. It furthermore—"

The murmur that filled the courtroom made the clerk's voice inaudible. Judge Fenton had to gavel for silence. Lowell felt a strange tightness in his throat as he leaned forward to hear better.

Someone behind him said, "That's a lot of money for a computer."

When the noise subsided, the clerk continued: "It furthermore announces that in line with its pioneering efforts in the fields of computer technology and the use of teaching machines, it will install Compo in the physics department as the world's first Computer-Professor beginning this fall."

The spectators roared and shrieked with glee, except for the college teachers in the courtroom, and the laughter spilled out into the crowd on the street. The thought of replacing a professor with a teaching machine was a joke they understood.

Now Harold Lowell understood why Compo had betrayed him, attacked him and made him appear incompetent. No, he didn't hate him for it.

A man — or a computer — does what he has to do. END

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THE IMPOSSIBLE STAR

BY BRIAN W. ALDISS

ILLUSTRATED BY NODEL

Huge as ten thousand giant stars, the unbelievable thing distorted space, time—and human thought!

I

When conditions veer away from normal, human reason tends to slip into madness.

Eddy Sharn looked at the sentence in his notebook and found it clutched tight to his chest, so that Malravin could not see what he wrote. "Tends to slip into madness," he particularly liked; the "tends" had a note of scientific detachment about it, the "madness" suggested something altogether more wild than "insanity". Which was appropriate, since they were a scientific detachment out in the wilds.

He was still savoring his little joke when the noises began in the hatch.

Malravin and Sharn exchanged glances. Malravin jerked his head towards the hatch.

"You hear that fool Dominguey? He makes all that noise on purpose, so that we'll know he's coming. What a big-headed joker to choose for a captain!"

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"You can't help making a noise in that hatch," Sharn said. "It was badly designed. They missed out on the soundproofing and the noise carries round in the air circuits. Besides, they're both in there making a noise. Jim Baron's with him."

He spoke pleasantly enough, but of course Malravin's had been a loaded remark. The great Siberian oaf knew that among the four antagonisms that had sprang up between the four men on the ship, some sort of an alliance had grown between Sharn and Dominguey.

The hatch opened, and the other members of the crew of the *Wilson* entered and began to remove their bulky suits. Neither Malravin nor Sharn moved to help them. Dominguey and Baron helped each other.

Billy Dominguey was a striking young man, dark and sinewy, with a wonderfully gloomy cavern of a face that could break into laughter when anyone responded to his peculiar sense of fun. Jim Baron was another doleful-looking type, a little compact man with a crewcut and solid cheeks that had turned red from his exertions outside.

He eyed Sharn and Malravin and said, "Well, you'd better get your sacks on and go out and have a look at it. You won't grasp its full impact until you do."

"It's a real little education, Jim, isn't it?" Dominguey agreed. "A higher education — I just wish they hadn't 'highered' to me to get it."

Baron put his arms out with his fingers extended and touched the plastic of the bulkheads. He closed his eyes.

"I didn't think I'd ever make it back into here, Billy. I'm sorry if I went a bit —"

Quickly, Dominguey said, "Yes, it's good to be back in the ship. With the artificial half-Gee being maintained in here, and the shutters down, this dump seems less like a cast-off version of hell, doesn't it?" He took Bishop's arm and led him to a chair. Sharn watched curiously; he had not seen the stolid and unimaginative Baron so wild-eyed before.

"But the weight business," Baron was saying, "I thought — well, I don't know what I thought. There's no rational way of putting it. I thought my body was disintegrating. I —"

"Jim, you're over-excited," Dominguey said harshly. "Keep quiet or get yourself a sedative." He turned to the other two men. "I want you two to get outside right away. There's nothing there that can possibly harm you. We're down on a minor planet, by the looks of things. But before we can evaluate the situation, I want you to check what that situation is — as soon as possible."

"Did you establish the spectroscopes? Did you get any readings?" Sharn asked. He was not keen to go outside.

"They're still out there. Get your suit on, Eddy. You too, Ike; go and look at them. Jim and I will get a bit to eat. We set the instruments up and we left 'em out there on the rock, pointing at Big Bertha. But they don't give any readings.

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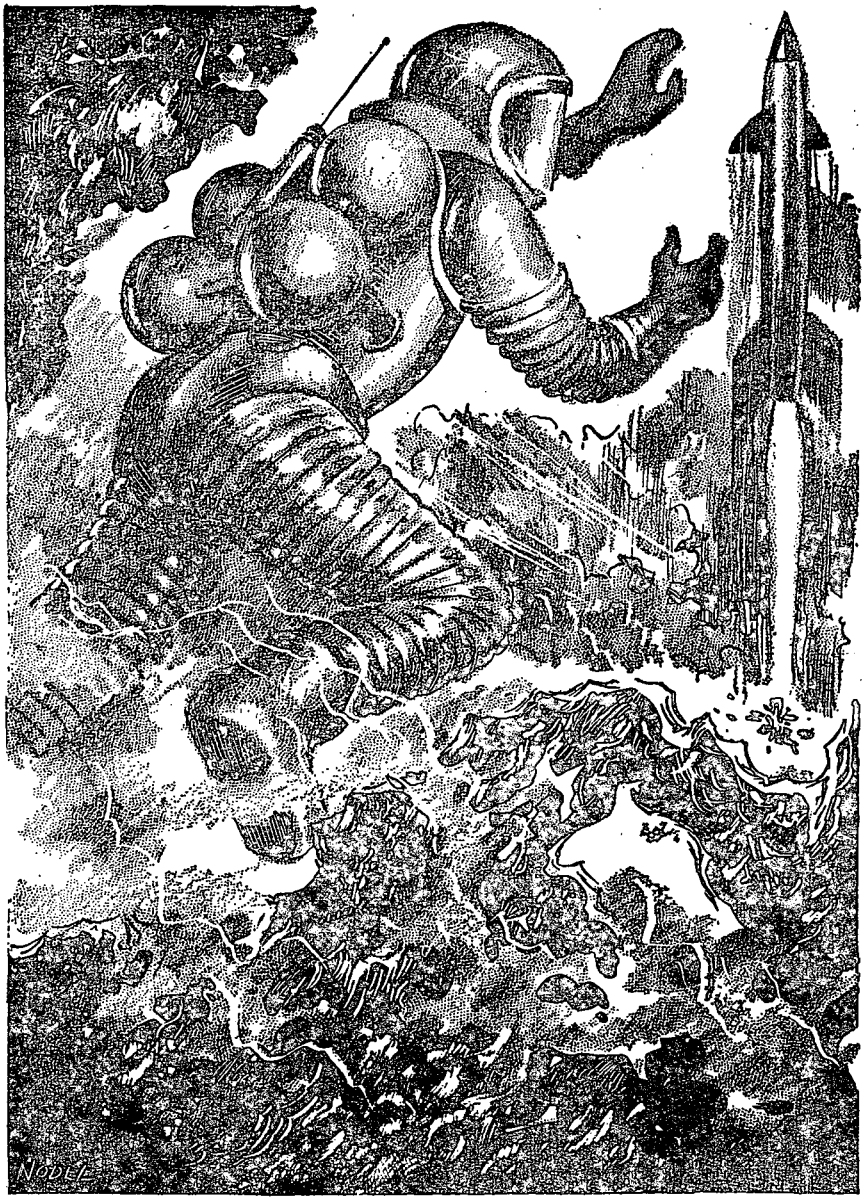

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Not any readings that make sense."

"For God's sake, you must have got something. We checked all the gear before you carted it outside."

"If you don't believe us, you get out there and have a goddamned good look for yourself, Sharn," Baron said.

"Don't shout at me, Baron!"

"Well, take that sick look off your face. Billy and me have done our stint — now you two get outside as Billy says. Take a walk around as we did. Take your time. We've got plenty of that till the drive is mended."

Malravin said, "I'd prefer to get on straightening out the coil. No point in me going out there. My job is in the ship."

"I'm not going out there alone, Ike, so don't try to worm out of it," Sharn said. "We agreed that we should go out there when these two came back."

"*If* we came back — conquering heroes that we are," Dominguey corrected. "You might have had a meal ready to celebrate our return, Eddy."

"We're on half rations, if you remember."

"I try never to remember a nasty fact like that," Dominguey said good-humoredly.

A preoccupation with food signifies a childish nature, Eddy thought. He must write that down later.

After more quarreling, Sharn and Malravin climbed into their suits and headed for the hatch.

They knew roughly what they would see outside. They had seen enough from the ship's ports, before they had agreed to close down all the shutters. But to view it from outside was psychologically a very different matter.

"One thing," Baron called to them. "Watch out for the atmosphere. It has an annoying way of wandering."

"There can't be an atmosphere on a planetoid this size!" Sharn protested.

Baron came up to him and peered through the helmet at him. His cheeks were still hectically flushed, his eyes wild.

"Look, clever dick, get this into your head! We've arrived in some ghastly hole in the universe where the ordinary physical laws don't apply. This place can't exist, and Big Bertha can't exist. Yet they do! You're very fond of paradoxes — well, now one has gobbled you up. Just get out there quickly, and you won't come back in as cocky as you are now."

"You love to blow your mouth off, Baron. It didn't do you much good out there. I thought you were going to die of fright."

Dominguey said urgently, "Hey, you sweet fellows! Stop it. I warn you, Eddy, Jim is right. You'll see when you get outside. In this bit of heaven, the universe is horribly out of joint."

"So will someone's nose be," Sharn promised.

He tramped into the hatch with Malravin. The burly Siberian thumbed the sunken toggle switches on the panel, and the airlock sank

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down to ground level, its atmosphere exhausting as it went.

They unsealed the door and stepped out onto the rough surface of the planetoid Captain Dominguey had sardonically christened Erewon.

They stood with the doughnut shape of the *Wilson* on stilts behind them and tried to adjust to the prospect. If anything, they seemed to weigh slightly more than they had in the ship's artificially maintained half-Gee field, although the bulk of their suits made this hard to tell.

At first it was difficult to see anything.

It always remained difficult to see anything well.

They stood on a tiny plain. The distance of the horizon was impossible to judge in the weird light. It seemed never more than a hundred yards away in any direction. It was distorted; this seemed to be because the plain was irregular. High banks, broken hollows, jagged lips of rock formed the landscape, the features running higgledy-piggledy in a way that baffled sense. There was no sign of the atmosphere Baron had mentioned. The stars came down to the skyline and were sharply occulted by it.

With the hand claws of their suits touching, the two men began to walk forward. They could see Baron's instruments standing deserted a short way off, and instinctively moved towards them. There was no need for lights; the entire bowl of the sky was awash with a thick sprinkle of stars.

II

The *Wilson* was a deep-penetration cartographic ship. With two sister ships, it was the first such vessel to venture into the heart of the Crab Nebula. There, weaving its way among the endless abysses of interstellar dust, it lost contact with the *Brinkdale* and the *Grandon*. The curtains of uncreated matter closed in on them, baffling even the subradio.

They went on. As they went, the concepts of space they had once held were erased. This was a domain of light and matter, not of emptiness and dark. All about them were coils of smoke — smoke set with sequins! — and cliffs of shimmering dust, the surface of which they could not have explored in two lifetimes. At the beginning the four men were elated at the sheer magnificence of the new environment. Later, the magificence seemed not beauty but of annihilation.

It was too big. They were too insignificant. The four men retreated into silence.

But the ship continued on its course, for they had their orders, and their honor, and their pay. According to plan, the *Wilson* sank into the heart of the nebula. The instrumentation had developed an increasing fault, until it became folly to go further, but fortunately they had then come to a region less tightly packed with stars and star matter. Beyond that was space, light-years across, entirely free of physical bodies — except one.

They found soon enough that it

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was no stroke of fortune to be here. Swilling in the middle of the gigantic hole in space was the phenomenon they christened Big Bertha.

It was too big. It was impossible. But the instruments ceased to be reliable; without instruments, human senses were useless there. Already bemused by travel, they were ill-equipped to deal with Big Bertha. To add to their troubles, the directional cyboscope that governed the jets in the ship's equator broke down and became unreliable.

They took the only course open to them. They landed on the nearest possible body, to rest there while they did a repair job and re-established contact with their sister ships.

The nearest possible body happened to be Erewon.

Touchdown on Erewon had been a little miracle, accomplished with few other instruments than human eyes, human hands and a string of human blasphemies. The hammer of static radiated by Big Bertha rendered radio, radar and radix all ineffective.

Now the sky was a wonder painful to view. Everywhere were the glittering points of stars, everywhere the immense plumes and shawls of inchoate matter illuminated by starshine. Yet it was all far away, glittering beyond the gravitational pull of Bertha. In her domain, only the wretched planetoid the *Wilson* rested on seemed to exist. It was like being a bone, alone in an empty room with a starving dog.

"Gravitation can be felt not only in the muscles but in the thalamus. It is a power of darkness, perhaps the ultimate power."

"What's that?" Malravin asked, startled.

"I was thinking aloud." Embarrassed, Sharn added, "Bertha will rise in a minute, Ike. Are you ready for it?"

They stopped by the pathetic cluster of instruments. They just stood there, rooted to the spot with a tension that could not be denied. Bertha had already begun to rise.

Their eyes were bad judges of what happened next, even with the infra-red screens pulled down over their faceplates. But they partly saw — and partly they felt, for a tidal sensation crawled across their bodies.

Above the eastern horizon, a section of the star field began to melt and sag. Star after star, cluster after cluster, uncountably stratified and then wavered and ran towards the horizon like ill-applied paint trickling down a wall. As if in sympathy, distortion also seized the bodies of Sharn and Malravin.

"An illusion! An optical illusion," Malravin said, raising a hand to the melting lines of stars. "Gravity bending light. But I've — Eddy, I've got something in my suit with me. Let's get back to the ship."

Sharn could not reply. He fought silently with something inside his own suit, something closer to him than his muscles.

Where the stars flowed, something was lumbering up over the

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horizon, a great body sure of its strength, rising powerfully from its grave, thrusting up now a shoulder, now a torso into the visible.

That was Bertha. The two men sank clumsily to their knees.

Whatever it was, it was gigantic. It occupied about twenty degrees of arc. It climbed above the horizon — but more and more of it kept coming, and it seemed to expand as it came. It rose tall, swallowing the sky as it rose.

Its outline indicated that it was spherical, though the outline was not distinct. The wavering bands of starlight rendered it impossible to see properly.

The sensation in Sharn's body had changed. He felt lighter now, and more comfortable. The feeling that he was wearing someone else's body had disappeared. In its place had come an odd lopsidedness. Drained, he could only peer up at the disturbance.

Whatever it was, it ate the sky. It did not radiate light. Yet what could be seen of it was clearly not seen by reflected light. It darkled in the sky.

"It — emits black light," Sharn said. "Is it alive, Ike?"

"It's going to crush us," Ike said. He turned to crawl back to the ship, but at that instant the atmosphere hit them.

Sharn had drawn his gaze away from that awesome monster in space to see what Malravin was doing, so that he saw the atmosphere arrive. He put a claw up to shield his face as it hit.

The atmosphere came up over the horizon after Bertha. It came in long strands, traveling fast. With it came sound, a whisper that grew to a shriek that shrilled inside their faceplates. At first the vapor was no more than a confusion in the gloom, but as it thickened it became visible as drab gray cloud. There were electrical side-effects, too. Corposants glowed along the ridges of rock about them. The cloud rose rapidly, engulfing them like an intangible sea.

Sharn found he was on his knees beside Malravin. They both had their headlights on now, and headed for the ship in a rapid shuffle. It was hard going. That lopsided effect spoilt the instinctive placing of their limbs.

Once they were touching the metal of the *Wilson's* airlock, some of the panic left them. Both men stood up, breathing heavily. The level of the grayish gas had risen above their heads. Sharn moved out from under the bulk of the *Wilson* and looked into the sky. Bertha was still visible through haze.

It was evident that Erewon had a rapid rotation speed. The monstrous black disk was already almost at zenith. Surrounded by a halo of distorted starglow, it lowered over the little ship like a millstone about to fall. Hesitantly, Sharn put up his hand to see if he could touch it.

Malravin tugged at his arm.

"There's nothing there," he said. "It's impossible. It's the sort of thing you see in a dream. And how do you feel now? Very light now, as in a dream! It's just a nightmare, and you'll —"

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"You're talking bloody nonsense, Malravin. You're trying to escape into madness if you pretend it isn't there. You wait till it falls down and crushes us all flat into the rock — then you'll see whether it's a dream or not!"

Malravin broke from him and ran to the airlock. He opened the door and climbed in, beckoning to Sharn.

Sharn stood where he was, laughing. The other's absurd notion, so obviously a product of fear, had set Sharn into a high good humor. He did — Malravin was right there — feel much lighter than he had. It made him light-headed.

"Challenge," he said. "Challenge and response. The whole history of life can be related in those terms. That must go into the book. Those that do not respond go to the wall."

"It's some sort of a nightmare, Eddy! What is that thing up there? It's no sun! Come in here, for God's sake!" Malravin called from the safety of the airlock.

"You fool! This is no dream or I'd be a figment of it — and you know that's nonsense. You're losing your head, that's all."

In his contempt for Malravin, he turned his back on the man and began to stride over the plain. Each stride took him a long, floating way. He switched off his intercom, and at once the fellow's voice was cut out of existence. In the helmet fell a perfect peace.

He found he was not afraid to look up at the lumbering beast in the sky.

"Put anything into words, and it loses that touch of tabu to which fear attaches. That object is a thing overhead. It may be some sort of a physical body. It may be some sort of a whirlpool operating in space in a way we do not yet understand. It may be an effect in space itself, caused by the stresses in the heart of a nebula: there must be all sorts of unexpected pressures here. So I put the thing into words, and it ceases to worry me."

He had got only to chapter four in the autobiography he was writing. But he saw that it would be necessary at some point — perhaps at the focal point of the book — to explain what prompted a man to go into deep space, and what sustained him when he got there. This experience on Erewon was valuable, an intellectual experience as much as anything. It would be something to recall in the years to come — if that beast did not fall and squash him! It was leaping at him, directly overhead.

Again he was down full length, yelling into the dead microphone. He was too light to nuzzle properly, heavily, deeply, into the ground; and he cried his dismay till the helmet rang with sound.

He stopped the noise abruptly.

"Got dizzy," he told himself. He shut his eyes, squeezing up his face to do so. "Don't relax your control over yourself, Ed. Think of those fools in the ship, how they'd laugh. Remember nothing can hurt a man who has enough resilience."

He opened his eyes. The next thing would be to get up.

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The ground was moving beneath him. For a while he stared fascinated at it. A light dust of grit and sand crawled over the solid rock at an unhurried but steady pace. He put his metal claw into it, and it piled against the barrier like water against a dam. Must be quite a wind blowing, Sharn told himself. Looking along the ground, he saw the particles trundled slowly towards the west. The western horizon was veiled in the cloud-like atmosphere. Into it the great grinding shape of Big Bertha was sinking at a noticeable rate.

Now other fears overcame him. He saw Erewon for what it was, a fragment of rock twirling over and over. He — the ship — the others — they clung to this bit of rock like flies, and — and —

No, that was something he couldn't face, not alone out here.

Something else occurred to him. Planetoids as small as Erewon did not possess atmospheres. So this atmosphere had been something else fairly recently. He saw it as an ice casing, embalming the rock.

Suddenly, more than irrational fear made him want to run. There was a logical reason as well. He switched on his mike and began to shout as he stumbled back towards the ship: "I'm coming back, fellers, open up! Open up, I'm coming!"

III

Some of the drive casing was off. Malravin's feet protruded from the cluttered cavity. He was in there with an arc lamp, still patiently working on the directional cyboscope.

The other three sat round in bucket seats, talking. Sharn had changed his clothes, toweled himself down and had a hot cup of Stimulous. Baron and the captain smoked mescahales.

"We've established that Erewon's period of rotation is two hours, five minutes odd," Dominguey told Sharn. "That gives us about an hour of night when the ship is shielded from Big Bertha by the bulk of the planetoid. Sunset of the night after next will fall just before twenty hours, Galactic Mean. At twenty hours, all governmental ships keep open listen for distress signals. Shielded from Bertha's noise, we stand our best chance of contacting the *Grandon* and the *Brinkdale* then. There's hope for us yet!"

Sharn nodded. Baron said, "You're too much the optimist, Billy. Nobody can ever get to rescue us." He spoke in an amused, confident tone.

"How's that again?"

"I said nobody can ever reach us, man. Consider it like this. We left ordinary space behind when we started burrowing into the nebula to get here. We agree that there's nowhere else like this place in the universe —"

"No, we don't," Dominguey said. "We agree that in less than eleven hundred years of galactic exploration we have covered only a small section of one arm of one galaxy. We don't know enough as yet to be capable of labeling an unusual situation unique ... though I'll

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agree it's a poor spot for a picnic. Now, you were saying?"

"Don't try and be funny, Billy. This is no place for humor — not even graveyard humor." Baron smiled as if the remark had a significance only he knew. He gestured with one hand, gracefully. "We are in a place that cannot possibly exist. That monstrous thing up in space cannot be a sun or any known body, or we would have got a spectroscopic reading from it. It cannot be a totally dead sun, or we would not see it as we do. This planetoid cannot be a planetoid for in reality it would be so near Bertha it would be swept into it by irresistible gravitational forces. You were right to call it Erewon. That's what it is— Nowhere."

Sharn spoke. "You're playing with Malravin's silly theory, Baron. You're pretending we are in a nightmare. Let me assure you such assumptions are based entirely on withdrawal —"

"I don't want to hear!" Baron said. The smile on his lips became gentler. "You wouldn't understand, Sharn. You are so clever you prefer to tell me what I think, rather than hear what I think. But I'm going to tell you what I think. I don't think we are undergoing a nightmare... I think we are dead."

Sharn rose, and began pacing behind his seat.

"Dominguey, you don't think this?"

"I don't feel dead."

"Good. Keep feeling that way — or we're going to be in trouble. You know what the matter is with Baron: he's a weak character. He has always supported himself with the methods of science. We've had nothing but a diet of facts from him for the last thousand light-years. Now he thinks science has failed him. There's nothing else left. He can no longer face the physical world. So, he comes to this emotional conclusion that he is dead. Classic withdrawal symptoms."

Dominguey said, "Someone ought to kick your tail, Eddy Sharn. Of all the glib and conceited idiots I ever met! At least Jim has come out with an idea. It's not so far-fetched at that, when you consider we know nothing about what happens after death. Try to visualize the period after heart action has ceased, when the body, and particularly the brain inside its skull case, still retains its warmth. What goes on then? Suppose in that period of time everything in the brain drains away into nothing like a bucket of water leaking into sand. Don't you think some pretty vivid and hallucinatory things would happen inside that head? And, after all, the sort of events happening to us now are typical of the sort that might occur to spacers like us in that dying period. Maybe we ran smack into a big chunk of dead matter on our way into the Crab. Okay, we're all dead. The strong feeling of helplessness we all have is a token of the fact that we are really strewn over the control cabin with the walls caved in."

Lazily clapping his hands, Baron said, "You put it even better than

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I could have put it myself, Billy."

"Don't think I believe what I am saying though," Dominguey said grimly. "You know me, laddy. Ever the funny man, even to death."

He stood up and confronted Sharn.

"What I am trying to say, Eddy, is that you are too fond of your own opinions. I know the way your mind works. You're much happier in any situation if you can make yourself believe that the other people involved are inferior to you. Now then, if you have a theory that helps us tackle this particular section of hell, Jim and I would be pleased to hear it."

"Give me a mescahale," Sharn said. He had heard such outbursts from the captain before, and attributed them to Dominguey's being less stable than he liked to pretend he was. Dominguey would be dangerous in a crisis.

Not that this was less than a crisis.

Sharn accepted the yellow cylinder, activated it, stuck it into his mouth and sat down. Dominguey sat down beside him, regarding him with interest. They both smoked in silence.

"Begin then, Eddy. It's time we took a quick sleep, the lot of us. We're all exhausted. It's beginning to show."

"On you maybe, Dominguey." He turned to Baron, languidly sunk in his chair.

"Are you listening, Baron?"

Baron nodded his head without looking up.

"Go ahead. Don't mind me."

Things would be so much simpler if one were a robot, Sharn thought. Personalities would not be involved.

Any difficulty has to be situation plus character. It's bad enough to be burdened with one's own character; one that has to put up with other people's as well. He pulled out his little notebook to write the thought down, saw Dominguey was eyeing him and began to speak abruptly.

"What's your silly fuss about? We're here to do a job of observation — why not do it? Before Ike and I went outside, you told us to watch for the atmosphere. I did just that; but from the nonsense you talk about being dead I'd say you were the ones who should have watched it. And this peculiar bodily sensation. You let it rattle you. So did Ike — so did I — but it doesn't take much knowledge to realize that the horrible sensation as if something was climbing about inside the suit with you has a rational and obvious explanation."

Baron got up and walked away.

"Come back when I'm talking, Baron!" Sharn said, angrily.

"I'm going to see how Malravin is getting on. Then I'm going to bunk down. If you have anything interesting to say, Billy can give it to me in a nutshell later. Your doubletalk holds nothing for me. I'm tired of your speeches."

"Tired? When you're dead? Needing to bunk down? When you're dead?"

"Leave him, for God's sake, and get on with what you are saying,"

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Dominguey said with a yawn. "Look, Eddy, we're in a nasty spot here. I don't just mean stuck on Erewon, though that's bad enough. But much more getting on each other's nerves and there will be murder done. I'd say you were turning into a very good candidate for the axe."

"You toying with the idea of murder, Dominguey? I suppose that could be another refuge from the realities of the position."

"Knock off that line of talk, Sharn! That's an order. You were talking about this strange bodily sensation we felt out on the rock. Don't be so coy about it. It's caused by the fact that most of our weight out there comes by courtesy of Big Bertha, not Erewon. Your mass orients itself partly according to where Bertha is, and not according to the body you are standing on. Of course it causes some odd sensations, particularly with respect to your proprioceptors and the balances in your inner ear. When the sun first rises, your intellect has to fight your body out of its tendency to regard the east as *down*. When the sun's overhead, the situation's not so bad; but your mass will always act as a compass, as it were, tending towards the sun — if Bertha is a sun. Have I taken the words out of your mouth?"

Sharn nodded.

"Since you're so smart, Billy, you've probably worked out that Bertha is a star. A big star. A star, that is, with an abnormally large mass. And I do mean abnormally —it's got an unique chance to grow here. It has gorging on bulk from the nebula. Its mass must be something above twenty-five million times the mass of Sol."

Dominguey whistled. "A pretty tall order! Though I see it is well placed for stellar growth processes. So you think it is just a gigantic accumulation of dead matter?"

"Not at all. There's no such thing as dead matter in that sense. Baron's the scientist — he'd tell you, if he wasn't heading for catatonia. You get such a mass of material together and terrific pressures are set up. No, I'm saying Bertha is a tremendous live sun built from dead nebular matter."

"That's all nonsense, though, Eddy. We don't even see it properly except as a shimmering blackness. If your theory were correct, Bertha would be a white giant. We'd all be scorched out of existence, sitting here so close to it."

"No, you're forgetting your elementary relativity. I've worked this out. This is no fool hypothesis. I said Bertha had twenty-five million times Sol's mass for a good reason: because if you have a sun that big, the force of gravity at its surface is so colossal that even light cannot escape off into space."

Dominguey put his mescahale down and stared at the nearest bulkhead with his mouth open.

"By the saints... Eddy, could that be so? What follows from that? I mean, is there any proof?"

"There's the visible distortion of distant starlight by Bertha's bulk that gives you some idea of the

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gravitational forces involved. And the interferometer offers some guide. It's still working; I used it out on the surface before I came back aboard. Why didn't you try it? I suppose you and Baron panicked out there, as Malravin did? Bertha has an angular diameter of twenty-two degrees of arc. If the mass is as I say, then you can reckon its diameter in miles. Should be 346 times the sun's, or about some 300 million miles. That's presuming a lot, I know, but it gives us a rough guide. And from there a spot of trig will tell you how far we are from Bertha. I make it something less than one billion six hundred million miles. You know what that means? We're as far from Bertha as Uranus is from Sol, which with a body of Bertha's size means we're very nearly on top of it!"

"Now you're beginning to frighten me," Dominguey said. He looked frightened, dark skin stretched over his cheekbones as he pressed his temples with his fingertips. Behind them, Baron and Malravin were quarreling. Baron had tripped over the other's foot as he lay with his head in the drive box, and they were having a swearing match. Neither Dominguey nor Sharn paid them any attention.

"No, there's one hole in your theory," Dominguey finally said.

"Such as?"

"Such as if Erewon was as close as that to its primary, it could never hold its orbit. It would be drawn into Bertha."

Sharn stared at the captain, mulling over his answer. Life was a misery, but there was always some pleasure to be wrung from the misery.

"I got the answer to that when I was outside rolling on the sterile stinking rockface," he said. "The vapor came pouring over the ground at me. I knew Erewon was too small to retain any atmosphere for any length of time. In fact, it was diffusing into space fast. Therefore, not so long ago, that atmosphere was lying in hollows on the surface, liquid. Follow me?"

Dominguey swallowed and said, "Go on."

"*You* made the assumption that Erewon bore a planetary relationship to Bertha, Dominguey. You were wrong. Erewon is spinning in from a colder region. The rocks are heating up. We haven't settled on a planetoid — we're squatting on a hunk of rock spiraling rapidly into the sun."

IV

There came the sound of a blow, and Malravin grunted. He jumped at Baron and the two men clinched, pummeling each other's backs rather foolishly. Dominguey and Sharn ran up and pulled them apart. Dead or not, Baron was giving a fair account of himself.

"All right," Dominguey said angrily. "So we've run ourselves ragged. We need sleep. You three bunk down, give yourselves sedatives. I'll get on fixing the cybo, Malravin. Set the alarm signal for nineteen hours fifty, G.M., so that we don't miss calling *Grandon* and

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Brinkdale, and bunk down. We want to get out of here — and we *all* want to get out of here. Go on, move! You too, Eddy. Your theory has me convinced. We're leaving as soon as possible, so I'm having peace while I work."

In turn they all protested, but Dominguey was not to be overruled. He stood with his hands on his hips, his dark face unmoving as they climbed into their bunks. Then he shrugged, set the alarm on the communication panel and crawled into the drive compartment.

It was not a matter of simple replacement. Fortunately they had spares for the little sinecells which studded the main spiral of the cyboscope that steered the ship. But the spiral itself had become warped by the extra strains placed on it during their penetration of the nebula. Malravin had drained its oil bath and removed its casing, but the business of setting it back into true was a slow precision job, not made easier by the awkward angle at which it had to be tackled.

Time passed...

Dominguey was listening to the sound of his own heavy breathing when the alarm bell shrilled.

He crawled out into the cabin. Sharn and Malravin were already rousing and stretching.

"That's four hours hard grind I just put in," he said, pushing his words through a yawn. "Eddy, see if you can raise the other ships, will you? I must have a drink and get some shuteye. We're nearly set to blast off."

Then he saw Baron, his ashen face, the crimson stain over his chest.

In two steps Dominguey was over to his bunk. Baron lay contorted on his left side, gripping a handful of blanket. He was dead, with a knife in his ribs.

Dominguey let out a cry that brought the other two down onto their feet.

"He's been murdered. Jim's been murdered! One of you two..." He turned to Sharn. "Sharn, you did this! You've killed him with his own explorer's knife. Why? Why?"

Sharn had gone as pale as Dominguey.

"You're lying! I never did it. I was in my bunk asleep. I had no quarrel with Baron. What about Malravin? He'd just had a fight with Jim. He did it, didn't you, Malravin?"

The alarm was still shrilling away. They were all shouting. Malravin said, "Don't you call me a murderer. I was fast asleep in my bunk, under sedation as ordered. One of you two did it. It was nothing to do with me."

"You've got a black eye coming on, Malravin." Dominguey said. "Jim Baron gave you that before you hit the sack. Did you stab him to even up the score?"

"For God's sake man, let's try and raise the other ships while we've the chance. You know I'd not do anything like that. You did it yourself, most likely. You were awake, we weren't."

"I was stuck with my head in the drive all the time."

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"Were you? How do we know?"

"Yes, he has a point, Dominguey," Sharn said. "How do we know what you were up to? Didn't you arrange for us all to get a bit of sleep on purpose, so that you could bring this off?"

"So he did, the filthy murderer!" Malravin shouted. "I wonder you didn't finish us all while you were about it!" Putting his hands up, he charged at Dominguey.

Dominguey ducked. He jumped to one side and hit Malravin as he lumbered past. The blow was a light one. It served merely to make Malravin bellow and come on again. On the table lay a wrench they had used earlier on the cybo casing. Dominguey hit Malravin with it at the base of the neck. The big fellow collided with a chair and sprawled with it to the floor, catching his head sharply against the bulkhead as he went.

"You want any?" Dominguey asked, facing Sharn with the wrench ready.

Shaking, Sharn formulated the word "No."

"See to Ike then, while I try to raise a signal." Nodding curtly, he went over to the communications panel and cut off the alarm. The sudden silence was as chilling as the racket had been a moment before. He opened up the subradio and began to call.

Sharn slipped to his knees and pulled Malravin's head up as gently as he could.

The man did not stir. Groaning, Sharn tried to adjust to what had happened. He tried to concentrate

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his thoughts. He muttered, "Humans instigate events; events affect humans. Once a man has started a chain of events, he may find himself the victim of the events. When I entered star service, this was a decisive action; but readers may think that since then I have been at the mercy — the mercy —"

He began to weep. Malravin was also dead. His neck was broken. Inside his head, still warm, thoughts pouring out into oblivion...

After some indefinite period of time, Sharn realized that Dominguey had stopped speaking. Only a meaningless gibber and squeak of static came from the subradio.

He looked up. The captain was pointing an iongun at him.

"I know you killed Jim Baron, Sharn," he said. His face was distorted by tension.

"I know you killed Malravin. I saw you do it, and there is the murder weapon on the floor."

The iongun wavered.

"Ike's dead?"

"Dead, just as you killed Baron. You're clever, Dominguey, the real silent superman type, always in command of his environment. Now I suppose you will kill me. With three bodies out of the hatch, the *Wilson* will lift a lot more easily, won't it? You'll need all that lift, Dominguey, because we are getting nearer to Bertha every minute."

"I'm not going to kill you, Sharn, just as I didn't kill Baron. Just as killing Malravin was an accident. There's a signal."

He swiveled his chair and turned up the volume of the set. Below the crackle of static, a faint voice called them. It said, "Can you hear me, *Wilson?* Can you hear me, *Wilson?* Grant of the *Brinkdale* here. Come in, please."

"Hello, Grant! Hello, Grant!" As he spoke, the captain moved the mike so that he could continue to cover Sharn with his iongun. "Dominguey of *Wilson* here. We're down on an asteroid for repairs. If I send a carrier, will you get a fix on us? Situation very urgent. Dawn is less than an hour away, and static will cancel reception then."

Far away, down a great well of time and space, a tiny voice asked for the carrier wave. Dominguey switched to *send* and turned to face Sharn.

Sharn still crouched over Malravin. He had brought himself under control now.

"Going to finish me at once, Dominguey?" he asked. "Don't want any witnesses, do you?"

"Get up, Sharn. Back over to the wall. I want to see if Malravin is really dead, or if you are up to some stupid deception."

"Oh, he's dead all right. I'd say you did a very good job. And with Baron too, although there it was easier because the poor fellow was not only asleep but believed himself already dead."

"You're sick, Sharn. Get over against that wall when you're ordered to."

They moved into their new positions, Sharn by the wall near the shuttered ports, Domin-

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guey by the ugly body on the floor. Both of them moved slowly, watching each other, their faces blank.

"He's dead all right," Sharn said.

"He's dead. Sharn, get into your spacesuit."

"What are you planning, a burial service? You're crazy, Dominguey! It's only a few hours before our mass cremation."

"Don't you call me crazy, you little snake! Get into your spacesuit. I can't have you in here while I'm working. I don't trust you. I know you killed Baron; you're mad and he had less patience with your talk and theories than any of us. You can't tolerate anyone who won't enlist as your audience, can you? But you're not going to kill me. So you wait outside until we are ready to go, or until the *Brinkdale* comes to pick us up, whichever is soonest. Move fast now, man! Into your suit!"

"You're going to leave me out here, compiling an anthology of ways to murder in galactic space? Beyond the solar system, the word of man becomes the word of God."

Moving fast, Dominguey slapped him across the cheek.

"— And the hand of God," Sharn muttered. He moved toward his suit. Reluctantly, he climbed into it, menaced continually by the iongun. Dominguey propelled him towards the lock.

"Don't send me out there again, Dominguey, please. I can't stand it. You know what Big Bertha's like. Please! Tie me to my bunk—"

"Move, man! I have to get back to the set. I won't leave you."

"Please, Dominguey, Captain, I swear I'm innocent. You know I never touched Baron. I'd die out there on the rock! Forgive me!"

"You can stay if you'll sign a confession that you murdered Baron."

"You know I never did it! You did it while we were all asleep. You saw how his idea about our all being dead was a menace to the general sanity, and so you killed him. Or Malravin killed him. Yes, Malravin killed Jim, Dominguey, it's obvious! You know we were talking together while they were quarreling! We're not to blame. Let's not be at each other's throats now we're the only two left. We've got to get out of here quickly — you need help. We always got on well together, we've covered the galaxy together—"

"Confess or get out, Sharn! I know you did it. I can't have you in here or you'll kill me."

Sharn stopped protesting. He ran a hand through his damp hair and leaned back against the bulkhead.

"All right. I'll sign. Anything rather than go out there again. I can always say I signed under duress."

Dominguey dragged him to the table, seized a scratch pad from the radio bench and forced Sharn to write out a brief confession to the murder of Jim Baron. He pocketed it and leveled the iongun again.

"Now get outside," he said.

"Dominguey, no! No, you lied to me — please—"

"You've got to get out, Sharn. With this paper in my pocket, you'd not hesitate to kill me now, given half a chance."

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"You're mad, Dominguey! Cunning mad. You're going to get rid of me and then blame it all onto me—"

"I'll count five, Sharn. If you're not on your way to that lock by then, I swear I'll fry your boots off."

The look on his face was unmistakeable.

Sharn backed into the lock, weeping. The door closed on him. He heard Dominguey begin to exhaust the air from the room panel. Hurriedly, he screwed down his face plate. The air whispered away and the lock descended to ground level.

When it stopped, he opened the door, unscrewed one of the levers from the control panel and wedged it in the doorway so that the door could not close. It could not retract until it was closed, so his way to the ship was not withdrawn.

Then he stepped out onto the surface of Erewon for a second time.

V

Conditions were changing. Bertha came ripping up into the sky, surrounded by a shock wave of star-blur. The further stars lent it a halo of confused light.

It was rising ahead of the timetable the humans had worked out; so communication with *Brinkdale* would now be effectively cut off. Also, the perceptible disk of the body was larger. They were indeed falling towards it.

Sharn wondered why he was not already fried to smears of carbohydrate on the rock, despite the refrigeration unit in his suit. But if Bertha was so gigantic, then she would not even be able to release her own heat. What a terrible towering thing it was! He looked up at it, in a sort of ecstasy transcending fear, feeling in his lack of weight that he was drifting out towards it. The black globe seemed to thunder overhead, a symbol — a symbol of what? Of life, of fertility, of death, of destruction? It seemed to combine aspects of all things as it rode omnipotently overhead.

"The core of experience — to be at the core of experience transcends the need for lesser pleasures," Sharn told himself.

He could feel his black notebook in his hip pocket, inaccessible inside the spacesuit. For all his inability to get at it, it might as well have been left back on Earth. That was a terrible loss — not just to him, but to others who might have read and been stimulated by his work. Words were coming to him now, thick and rich as blood, coming first singly, like birds alighting on his shoulder, then in swarms.

Finally he fell silent, impaled under that black gaze. The isolation was so acute; it was as if he alone of all creation had been singled out to stand there — there under something that was physically impossible.

He switched on his suit mike and began to speak to Dominguey.

"I want to come back aboard. I need to make some calculations. I'm beginning to understand Bertha. Her properties represent physical impossibilities. You understand that, don't you, Dominguey? So how can she exist? The answer must be that

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beneath her surface, under unimaginable conditions, she is creating anti-matter. We've made a tremendous discovery, Dominguey! Perhaps they'll name the process after me: the Sharn Effect. Let me come back, Dominguey. . ."

But he spoke to himself, and the words were lost in his helmet.

He stood mute, bowing to the black thing.

Already Bertha was setting. The foggy blanket of atmosphere was whipped off the bed of rock, following, following the sun round like a tide. The vapor was thinner now, little more than shoulder high as its component molecules drained off into space.

The weight-shift took place. Sharn's body told him that *down* was the monstrous thing on the horizon, and that he walked like a fly on the wall across Erewon. Though he fought the sensation, when he turned back towards the *Wilson,* he moved uphill, and the vapors poured across him in a dying waterfall.

Taking no notice of the vapors, Sharn lumbered back to the airlock. He had remembered the thick pad of miostrene that hung clipped to one wall of the lock, a stylo beside it. It was placed there for emergencies, and surely this was one.

As he reached for it, Dominguey's voice came harshly through his headphones.

"Stay away from that lock, Sharn. I've got the casing back on the cyboscope and am preparing to blast off. I shall have to take a chance on maneuvering. Get away from the ship!"

"Don't leave without me, Dominguey! Please! You know I'm an innocent man."

"I've got your confession! Stand clear for blastoff!"

"But I've made an important discovery."

"Stand clear!"

The connection went dead. Sharn cried into his suit. Only the universe answered.

Clutching the miostrene pad, he ran from the lock. He ran after the last disappearing strand of vapor, sucked along the ground like a worm withdrawing. He lumbered down a cliff that began to seesaw back towards horizontal. The big sun had disappeared below the group of rocks that did rough duty for a horizon.

A tower of distorted strata rose before him. He stooped behind it and looked back.

A golden glow turned white; a plump pillow of smoke turned into flat sheets of vapor that flapped towards him; the ship rose.

Almost at once, it was hidden behind the northern horizon. The movement was so sudden and unpredictable that Sharn thought it had crashed, until he realized how fast ship and planetoid were moving in relation to each other. He never caught another glimpse of it.

Calmer now, he stood up and looked round. In the rock lay a great crater. The last of the smoke was sucked into it. He hobbled over to it and looked down.

A great eye looked back at him.

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Sharn staggered away in alarm, running through the passages of his mind to see if delusion had entered there. Then he realized what he had seen. Erewon was a thin slab of rock, holed right through the middle. He had seen Bertha lowering on the other side. In a minute, it would rise again.

Now the illusion of day and night, with its complimentary implication that one was on a planet or planetoid, was shattered. That great eye held truth in its gaze. He clung to an infinitesimal chunk of rock falling ever faster towards its doom.

As he squatted down with his pad, the sun came up again. It rushed across the arch of space and disappeared almost at once.

Erewon bore no trace of any vapor to follow it now. And another illusion was gone: now plainly it was the chunk of rock that turned, not the mighty ball that moved. *That* was stationary, and all space was full of it. It hung there like a dull shield, inviting all comers.

He began to write on the pad in big letters. "As this rock is stripped of all that made it seem like a world, so I become a human stripped of all my characteristics. I am as bare as a symbol myself. There are no questions relevant to me; you cannot ask me if I murdered a man on a ship; I do not know; I do not remember. I have no need for memory. I only know what it is to have the universe's grandest grandstand view of death. I—"

But the rock was spinning so fast now that he had to abandon the writing. A spiral of black light filled space, widening as he drew nearer to Bertha. He lay back on the rock to watch, to stretch his nerves to the business of watching, holding on as his weight pulsed about him in rhythm with the black spiral.

As he flung the pad aside, the last word on it caught his eye, and he flicked an eyebrow in recognition of its appositeness:

"I—"

END

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In Our Next Issue

Keith Laumer nails down his title as *Worlds of Tomorrow's* most frequently represented writer with a long novella that we recommend highly: *The Night of the Trolls*. Laumer's "trolls" do not live in caverns under the earth. In fact, they don't properly "live" at all — and what's more, their *single purpose in existence is to make sure that nobody else lives either!*

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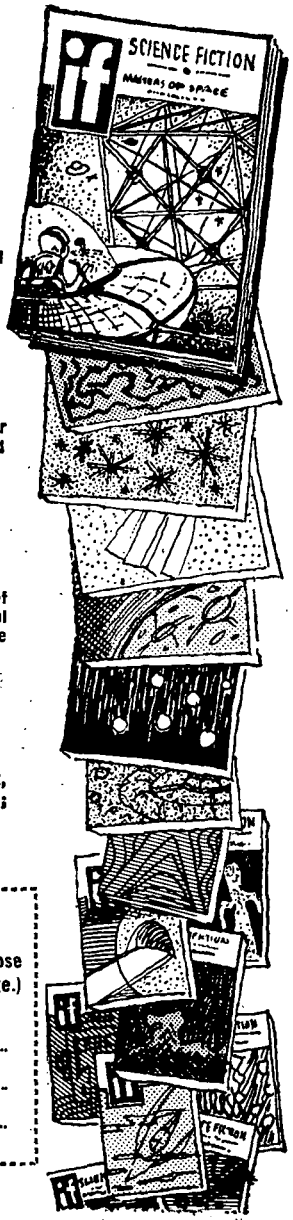

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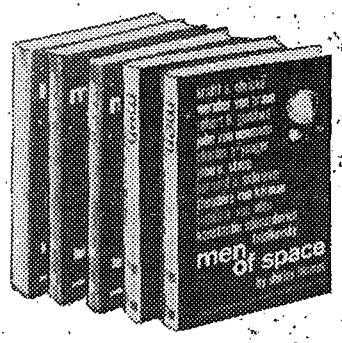

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